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ABSTRACT

This document is the final report of the Community Leaders' Training in Environmental Studies Project conducted at Florida State University. The project sought to increase community environmental awareness and to expand the educational uses of the Tallahassee Junior Museum through the cooperation of museum staff, a variety of community groups, and the Florida State University's environmental studies program. The report describes the project and lists the title, location, cooperating institutions of higher education, and project director. Sections are included on project category and description of community problems, specific objectives of the project, project content description, project accomplishments and evaluation, geographic area served, prior history of the project, faculty involvement, student involvement, participant demographic data, project materials, and evaluation of the relationship of this project to the overall state program of community service and continuing education. The appendices include examples of the project's materials. (DE)

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FINAL REPORT: 1975-1976

Title I, HEA Project 75-125-004

Rodney F. Allen, Project Director
Science and Human Affairs
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Tallahassee, Florida 32306

COMMUNITY LEADERS' TRAINING IN ENVIRONMENTAL STUDIES: A CO-OPERATIVE COMMUNITY PROJECT FUNDED UNDER TITLE I OF THE HIGHER EDUCATION ACT OF 1965

Final Report Prepared By

Rod Allen
David LaHart

JUNE 30, 1976

SP 009 046

JOHN SCOTT DAILEY, ADMINISTRATOR
STATE TITLE I, HEA 1965, AGENCY
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TALLAHASSEE, FLORIDA 32304

WAYS TO ENVIRONMENTAL EDUCATION,

FINAL REPORT 1975-1976

Prepared by

Rod Allen
David LaHart

Project Summary

Florida State University's Environmental Education Project has been heavily involved in training community leaders in environmental studies since the summer of 1974. This highly innovative program was funded for two years by Title I of the Higher Education Act of 1965.

The first year of the Project focus was given to the development of teaching aids and materials specifically designed for community groups. For example, Girl Scout leaders developed environmental learning games and activities for Girl Scouts. The Apalachee Audubon Society developed materials designed to acquaint their membership with the wildlife found in North Florida. Thirty-five different "Ways" booklets were developed by community leaders with the help of the Project staff. These booklets were distributed by the adult leaders that designed and created the materials. A Florida-wide distribution was made with the cooperation of the Florida Office of Environmental Education.

Community leaders often gave their booklets to school teachers, other organizations or kept them for use as a family learning guide. Booklets, or specific units in the booklets, were reprinted by other organizations, several school districts and even by state agencies. This "spin-off" is still continuing.

The second year of Title I support provided the opportunity to review the material developed the previous year and regroup much of it into more functional packages. Activities developed by Garden Club Officers were combined with some materials developed by School Volunteers and by the Florida Association for Children Under Six (FACUS). This made a useful assortment of environmental activities and games for educators who work with children in pre-schools and in the primary grades. In addition, the Project staff conducted over 30 workshops to train new members of the organizations who had participated the first year.

This community environmental project was gratifying in several ways. A sizable body of non-formal educators was reached through the Project. Non-formal educators make significant impacts on community learning; these educators now have environmental knowledge they can convey to their special audiences. The Project created a tremendous resource through its booklets. These booklets are available at local libraries and throughout the country through the Educational Resources Information Center (ERIC). The ERIC system can provide paper copies and microfiche copies of all the materials for an extremely low cost.

The fact that the booklets and the ideas themselves are being copied speaks to their usefulness to educators in both the formal and non-formal educational sectors.

The impact is even greater than the ideas and activities represented in the four volumes of "Ways Booklets." The Project staff is often invited to participate in workshops and curriculum projects outside the geographical range of the original Project.

The Environmental Education Project at Florida State University is now recognized as a leader in innovative community environmental education. The two-year Project will terminate in June, 1976, but the "spin-off" will continue for many years.

WAYS TO ENVIRONMENTAL EDUCATION, Vol. I, ED 100 734 R.I.E., May, 1975; Vol. II, ED 100 325 R.I.E., July, 1975; Vol. III, ED 106 213 R.I.E., July, 1975; Vol. IV, ED 107 579 R.I.E., October, 1975.

WAYS TO ENVIRONMENTAL EDUCATION, Final Report, 1974-75, ED 107 583, R.I.E., October, 1975.

WAYS TO ENVIRONMENTAL EDUCATION, Final Report, 1975-76 (TO BE READY, JUNE, 1976).

State: FLORIDA Project ID # 75-125-004

TITLE I, HEA FINAL PROJECT REPORT
(For Use in Part C of the Annual Program Report)

1. Project Title: COMMUNITY LEADERS' TRAINING IN ENVIRONMENTAL STUDIES: AN ACTION ORIENTED EDUCATION PROGRAM.

2. Location of Project: FLORIDA STATE UNIVERSITY, TALLAHASSEE, FLORIDA 32306.

3. Primary Institution of Higher Education: FLORIDA STATE UNIVERSITY, TALLAHASSEE, FLORIDA 32306

4. Coöperating Institutions of Higher Education: NONE

5. Project Director (Name, Title, and Address)

RODNEY F. ALLEN, ASSOCIATE PROFESSOR,
SCIENCE AND HUMAN AFFAIRS PROGRAM, COLLEGE OF EDUCATION,
FLORIDA STATE UNIVERSITY, TALLAHASSEE, FLORIDA 32306

6. Project Funds

Financial data removed by ERIC.

7. Identify the Community Problem

I. Categorize the project in terms of problem area.

___	Government	___	Crime/Law Enforcement
___	Housing	___	Health
___	Poverty	___	Economic Development
___	Transportation	___	Human Relations
✓	Environmental Quality	___	Personal Development
___	Youth Opportunities	___	Education/School Systems
___	Recreation	___	Community Development
___	Employment	___	Land Use
		___	Other

II. Describe the community problem. The description need not be lengthy but should be specific and clearly stated.

Our proposal called for a second (and final) year of Title I funded activity involving the Tallahassee Junior Museum, Florida State University's Environmental Education Project, and a diverse group of adult community leaders in the Tallahassee area. This was to be a transitional year. The staff wanted to build stronger community interest and support for this educational outreach program. We wanted to develop the materials and workshop program format to shift this outreach program from Title I seed money to an F.S.U. Continuing Education function. Community groups would request environmental education workshops at the Junior Museum to meet their needs. Because the Title I funding has supported the development of workshop materials, plans, procedures, and staff training, these workshop requests would be provided by our FSU Project at very low costs to all community groups. No additional funding will be required. The workshop programs will now be part of our effort and the program of the Junior Museum and will be self-supporting (with costs for a workshop being minimal). Another factor which makes it easy to continue this program on a self-supporting, low-cost basis, is our reliance on FSU-based staff personnel who will remain available, and there is no need for the expense of bringing in outside speakers and authorities.

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The Tallahassee Junior Museum was established in 1962 on a site outside the city on Lake Bradford and provides the community a Center of interest in the fields of early Florida pioneer history and environmental science. While most of the Museum's education programs are youth-oriented (in 1972-73 over 26,000 school children visited the Museum) the exhibits, wildlife, pioneer farm and nature trails have a tremendous appeal for everyone in the community.

The fifty-acre site was developed in such a way as to preserve as much of the natural flora and fauna as possible. The nature trails meander over forty acres of virgin lakeside wilderness. Open field areas are full of flowers in the fall, large oaks providing a canopy of shade, and long boardwalks over a cypress swamp hold a fascination for visiting hikers. White tail deer and wild waterfowl can sometimes be spotted in their natural habitat.

Animals are found in many areas of the Museum. Small mammals and birds are kept in a small animal compound where they are used for study. Other animals like the white-tailed deer, the bald eagle, and wild waterfowl are exhibited in large habitats which allow them relative freedom. The Museum plans to eventually have most of its animal collection in natural habitats.

The Museum's "Big Bend" pioneer farm is authentic. The buildings were built in the 1880s at Hosford, about forty miles west of Tallahassee. Only the smokehouse and the blacksmith shop were reconstructed--and then, old materials were used. The farm area is enclosed by a split rail stake-and-rider fence also moved from the original farm site. The animals found on the farm are typical of ones found in early Florida barnyards.

The main Museum buildings house changing exhibits on natural science, history, social sciences, art and music. The Natural Science Building features diaramas on birds, a bird-viewing window, and the Museum's collection of live snakes and reptiles.

The Tallahassee Junior Museum is a tremendous attraction and community educational facility for the Tallahassee area and represents a substantial investment of time and capital by members of the community. At a time when the community is very concerned about environmental quality--demanding increased planning and protective ordinances--the Museum offers the place and the resources for community-wide environmental awareness and education programs.

In essence we saw two <u>needs</u> which come together to provide an <u>opportunity</u>. First, adult community leaders in Tallahassee are expressing the need for environmental awareness. Few groups and agencies are now functioning to provide more than raw information on environmental issues; very few are able to offer an effective educational program to the leaders of groups and agencies or to their participants and clients. At the same time, the Tallahassee Junior Museum was heavily used only in the morning hours when the staff provides educational programs for school children. During these hours the Museum could serve others, if groups and agencies conducted their own programs. In the afternoons and in the afterschool hours, the Museum facilities are little used. On weekends, the public visits, but without benefit of formal educational programs. With adult community leaders trained in the use of the Museum and with guide/ideabooks designed for those community groups, the use of the Museum would be expanded and the degree of environmental awareness and concern will be heightened.

1) Our task was to <u>broaden</u> (i.e., age, race, income, concerns) the educational use of the Museum via more groups using their own leaders to meet their own concerns and goals, 2) to <u>heighten</u> environmental awareness via the Junior Museum's superb facilities, and 3) to <u>intensify</u> serious environmental experiences at the Museum.

We have found that many adult leaders are concerned but need the educational know-how and techniques for their group's efforts. In North Florida growth poses a clear and present danger to the quality of the environment, but also a clear and present opportunity to create the broad-based awareness and sensitivities which will sustain persons as they decide upon matters which affect their lives and environmental quality.

8. Specific Objectives of the Project

Environmental Studies Training Objectives:

1./ Contact persons and community groups served during the first year to arrange for retraining workshops, especially for leaders who are new in these organizations and agencies. Retraining workshops will be based upon the activity booklets produced during the first year.

Target Audience: 300 adult leaders COMPLETE

2./ Contact persons and community agencies who serve low-income and fixed-income persons in our community and arrange for training workshops so that these leaders can supply free, quality recreational and educational programs focused upon environmental understanding. These workshops will employ activity booklets produced during the first year.

Target Audience: 50 adult leaders COMPLETE

3./ Make presentations before groups of adult community leaders in the Tallahassee area on environmental education opportunities at the Junior Museum, using the Slide-Tape Program and focused upon specific group concerns (i.e., Garden Clubs, Scout leaders, school principals' group, Sierra Club, PTA groups, religious groups, Junior League, etc.).

Target Audience: 1,000 adult leaders COMPLETE

4./ Make presentations before State-wide groups of adult community leaders using the Slide-Tape Program and focused upon 1) the need for environmental understanding and 2) the opportunities provided by facilities such as the Tallahassee Junior Museum (i.e., Florida Council for the Social Studies, League of Women Voters, Conservation Education Association, Florida Audubon Society, etc.).

Target Audience: 1,000 adult leaders COMPLETE

5./ Conduct a one-day, community-wide environmental education program at the Junior Museum, stressing the environment as a legacy from the past and for the future at our nation's Bicentennial. Participants will be invited from a full range of adult community leaders (i.e., elected officials, State and local government personnel, Garden Clubs, Scouts, wildlife groups, etc.).

Target Audience: 500 adult leaders COMPLETE

6./ With officials from the Junior Museum and F.S.U.'s Division of Continuing Education, draw together our experiences with the workshops in order to develop a plan for offering one-day environmental education workshops to community groups upon request. This plan will continue our educational outreach program beyond, but based upon, the two-year developmental effort funded under Title I.

8 COMPLETE

Dissemination Objectives:

7./ Design and produce a slide-audio tape dealing with community environmental studies opportunities and programs at the Tallahassee Junior Museum.* Copies of this slide-tape presentation will be deposited with 1) the education staff of the Tallahassee Junior Museum, 2) the staff of our F.S.U.-based project, and 3) the media center at the Leon County Public Library. Purpose: 1) for loan to adult community leaders who want to encourage environmental community studies by the membership in their organizations; 2) for use by the Museum and the Project staffs in formal presentations before groups of local adult community leaders in order to encourage them to use the facilities at the Junior Museum for environmental education; and 3) for use in presentations by the Project staff before out-of-town groups of adult community leaders to encourage other communities to develop similar facilities for environmental awareness and understanding.

COMPLETE

8./ To complement the slide-tape presentations, the Project staff will write and distribute an Action-Guide for Developing Community-Oriented Environmental Education Facilities and Programs. This Guide will be published in a State-wide magazine (probably the Florida Audubon Society's Florida Naturalist)** and distributed via local community leaders and State agencies to elected officials, public employees, and adult community leaders in Florida.

COMPLETE

Target Audience: 3,000 adult leaders

9./ Put booklets of environmental education activities, produced by adult community leaders, together in a usable, workable product which is cross-indexed by community group, age level, and subject matter concern. Copies to be deposited in local public libraries for use by adult community leaders who are planning educational programs for their groups' members.

Target Audience: Materials would be continually available to local leaders (exact number of users cannot be estimated)

COMPLETE

10./ Make all Project materials and reports available to adult community leaders throughout the State and across the nation by depositing these materials and reports with two government-sponsored ERIC Clearinghouses: 1) the Science, Mathematics, and Environmental Education ERIC Center at Ohio State University, Columbus, Ohio, and 2) the Social Science ERIC located in Boulder, Colorado. Adult community leaders and other educators may obtain these materials from ERIC, at cost, on microfiche cards or in xerox copies.

Target Audience: State, national, and international groups of environmentally concerned persons (the exact figure of potential users cannot be estimated)

COMPLETE

PROPOSED SCHEDULE OF ACTIVITIES

"COMP." = Those activities which have successfully completed to June 30th, 1976.

1 July to 1 September, 1975

- Write Slide-Tape Script, get critical reviews, revise script COMP.
- Do photographic work for the Slide-Tape Program COMP.
- Write initial draft of the Action-Guide for Developing Community-Oriented Environmental Education Facilities and Programs, obtain critical reviews COMP.
- Begin Project publicity and contacts with community groups to schedule training workshops for the year (sign-up participants) COMP.

2 September to 30 December, 1975

- Complete Slide-Tape Program and deposit (as in proposal) COMP.
- Complete Action-Guide and publish (as in proposal) COMP.
- Make community group presentations on environmental education opportunities at the Tallahassee Junior Museum, using Slide-Tape Program COMP.
- Distribute the Action-Guide COMP.
- Hold community-wide environmental education day at the Junior Museum COMP.
- Conduct at least seven training workshops with adult community leaders COMP.

1 January to 30 March, 1976

- Conduct at least ten training workshops with adult community leaders COMP.
- Make community group presentations on environmental education opportunities at the Tallahassee Junior Museum, using the Slide-Tape Program COMP.
- Disseminate the Action-Guide COMP.
- Prepare and deposit the cross-indexed booklet of community environmental education activities COMP.

1 April to 30 June, 1976

- Place all Project materials and reports with ERIC Centers for dissemination COMP.
- Complete distribution of Action-Guide COMP.
- Do final workshop training sessions and presentations COMP.
- Compile all evaluation data and write final report to Title I funding Agency COMP.

The community-wide environmental days at the Museum and the presentations before adult community groups are clear as stated in the objectives. The seventeen workshop sessions (minimum) to be offered during 1975-76 will be different from those writing workshops which we conducted during the first year. During 1975-76 participants in workshops will learn to use and, where necessary, to modify those booklets and activities produced during the first year. The emphasis is upon education and training to do an effective job of environmental education at the Museum with one's own community group members. The workshops will stress DOING environmental education, building competency and confidence in each participant so that he/she can and will follow through with members in her/his community organization.

Each participant will be grouped with persons of similar interests for a session. The participants will have a minimum of 8 hours of time with the staff and this time is expanded depending upon the participants' interest area, time available in their personal schedules, etc. The Project Staff will provide training sessions at the convenience of the participants, including evening and weekend sessions. For example, a group of Garden Club members may spend each afternoon for a week at the Museum working with the staff, while a group of sixth grade teachers may work several evenings and a Saturday morning on their interests.

Each training session will involve the following:

--an opportunity to become familiar with the Junior Museum facilities and to meet with the Museum staff
--environmental awareness activities appropriate to participants' interests
--an examination of existing environmental studies booklets and programs (goals, objectives, materials and activities) appropriate to the participants' interests (i.e., Garden Club, Senior Citizens, etc.).

These sessions will not be courses in the usual sense, carrying academic credit. No university credit will be provided and no fees will be charged to participants for enrolling, for materials, for supplies, or for copies of the booklets to be printed and distributed. All activities will be covered by the proposed budget with the university and Junior Museum contributions.

9. Project Operations

I. What was the primary type of activity? (Check one)

___ Course
___ Conference
✓ Workshop/Seminar
___ Research
___ Technical Assistance
___ Counseling (Personal)
___ Mass Media
___ Radio
___ T.V.
___ Other (specify)
___ Information Dissemination (i.e. publications, pamphlets, manuals)
___ Other (specify)

II. Describe the project content, method, and materials employed, the personnel involved, and where applicable, the frequency and duration of sessions.

WORKSHOP SESSIONS		White/Non-White		
May, 1975	Tallahassee Teachers	19	6	
June 16-20	Jacksonville Teachers	15	13	
July 15-20	Ontario Teachers	90		
August 11-15	Ocala Teachers	24	6	
August 17-20	Conservation Education Association	200		
August 20	Live Oak Teachers	16	4	
August 29	Wakulla Teachers	12	4	
October 3	State Science Supervisors	8		
October 3-8	Ocala Substitute Teachers	8		
October 11	Ocala Teachers	9	1	
October 14	Okaloosa County Teachers	8	2	
October 17	Florida Council for the Social Studies	15	3	
October 20	Port St. Joe Teachers	38	4	
October 20	Tallahassee Federation of Garden Clubs	30		
November 8	Girl Scout Leaders	10		
October 27	Walton County Teachers	30	2	
December 4-5	Leon County and Regional Teachers	24	3	
January 28, 1976	Atlanta Girl Scout Leaders	16		
January 29	Atlanta Girl Scout Leaders	20		
February 2-3, 16-20	Pinellas County Teachers	21		
February 26	Leon County Senior Citizens		35	
March 22-24	Leon County High School Teachers	15	5	
March 29	Jefferson County Teachers	16	4	
March 29-April 2	National Youth Corps Leaders	70	15	
April 22	Religion and Nature (Killearn Methodist Church)	31		
April 25-27	Humanities and Environment Conference	58	11	
April 28-29	Leon County Substitute Teachers	16	4	
May 10	Leon Early Childhood Education Group	12	6	
June 14-18,21-25	Energy Workshop (5 county area)	30	10	
	TOTALS	861	138	999

The programs noted above ranged from 2 1/2 hour sessions to several days of all-day sessions.

MAJOR COMMUNITY DAY EVENTS

July 19th Summer Nature Day: Project staff distributed information and took persons on field trips

October 5th Fall Nature Day: same as above

DISSEMINATION TO COMMUNITY

October 1st — Flyers on our materials available at cost through ERIC were mailed to all schools in our four county area.

October 15th — Project Brochure mailed in multiple copies to all schools in our four county area.

October 28-November 1st — Junior Museum staff had a booth on our project materials and activities at the North Florida Fair (won SPECIAL DISPLAY award). Distributed Project flyers and brochures.

January 9-10th — Participated in a Population Education Conference in Tallahassee, distributing materials and did a follow-up mailing to all participants.

Numbers served: 40 persons

April 3 — Spring Nature Day, Tallahassee Junior Museum

April 25-27 — Two evening sessions for Humanities and Environment Conference (Huston Smith, Syracuse University, and Ms. Marjory Stoneman Douglas, Miami, Main Speakers)

Numbers served: 1,500 persons

FUTURE COMMITMENTS

Association for Early Childhood Education International. Meeting in Tallahassee, November, 1976. We will have participants on early childhood nature walks (with Ways booklets which have been printed). AECI will bus 1,000 participants to the Museum from the Hilton Hotel.

10. Project Accomplishments

A. Evaluation

I. Discuss the nature and the findings of the project evaluation. Include an assessment of the projects success in meeting its specific objectives (see #8). In addition, comment on what you see as the reasons for the success or failure of the project. Did the project reach the anticipated target group? Was the level of participation as high as was projected? What outcome is most worthy of dissemination to other states and institutions of higher education?

As noted earlier the Project exceeded its proposed objectives as to the number of workshops and the numbers of participants. On those objectives calling for a specific product, those objectives were met successfully. We had outside evaluators (environmental educators in Florida) review our materials and the assessment was favorable. Periodically we collected data from workshop participants and the results were very favorable.

All of the Project's materials--produced by the community workshop groups--are disseminated to other States via the National ERIC System. We have deposited these materials in the System through the ERIC/CHESS Center in Boulder, Colorado, and will continue to do so in subsequent workshops (beyond our Title I funding period).

II. Will the program itself continue beyond <u>this</u> period of Title I funding? If so, under what sponsorship or support. (Check one)

___	Continued under Title I*	___	Accomplished purpose no further plans
___	Continued with other Federal funding	___	Unsuccessful, no further funding
X	Continued with non-Federal funds	___	Other (specify)

* List new project ID number(s):

10. Project Accomplishments (cont.)

B. Relative to Institution(s) of Higher Education

Indicate the impact of the project upon on-going program(s) of participating colleges and universities. Have changes occured, or are they anticipated, in the organization, curriculum, budget, community service program, or other aspects of the institutions(s)? Describe any planned or unexpected "spin-offs" involving additional funds or activities generated.

The Project has not had an impact upon the regular budget or the allocation of in-house resources at Florida State University. No additional credit courses have been designed and offered. No new credit courses are envisioned.

However, the Title I Project has made a significant impact upon the development of Florida State University's Environmental Education Project and upon its non-credit community service work. We have established a firm working relationship with various county school systems, with the Florida Office of Environmental Education, with the Tallahassee Junior Museum, and with a host of community based environmental groups. We have revised our materials design and implementation procedures as a result of the two-year Project--now working with the users of instructional materials in the design of their own programs (as opposed to handing down University written materials). We have developed the staff competency to conduct local workshops designed with participants to meet their individual needs. We have established our reputation in this area of community based education so that demands for staff time have replaced the more usual recruitment of persons and groups to "our" workshops.

We have also been able to attract additional financial support for our efforts with community groups as a result of the Title I seed money. Recently, programs were funded by the Florida Endowment for the Humanities and by the U.S. Energy Research and Development Administration. These spin-offs continue well into the following year.

10. Project Accomplishments (cont.)

C. Relative to the Community. Specify the extent and the nature of the involvement in the project of community leaders, citizens, public and private agencies and State and local government. Were they, for example, involved in the initiation of the proposal and/or the planning and development of the project? Have any new community agencies, organizations, or groups been established as a result of this project? Has the community service capability of existing agencies and organizations been increased. If so, please describe:

Persons from local community groups were active in the design of the Project. The Tallahassee Junior Museum staff participated from the very conception of the idea, and other community groups (Audubon Society, teachers' groups, etc.) were involved in planning. The Florida Office of Environmental Education (C. Richard Tillis, Director) was instrumental in our planning, and later in the dissemination of our materials.

The list of community groups participating in the Project's workshops and special community events has been expensive over two years. A list of the workshop groups for 1975-76 is provided earlier in this report.

Our main concern was to strengthen the use of the facilities at the Tallahassee Junior Museum and we have accomplished that by helping groups design programs for use at that location, showing them new ways to use the facilities, and projecting pre- and post instructional events which they might employ.

The staff at the Junior Museum has ample programmatic ideas to enhance their own program; and a spin-off which came through our distribution of materials to other community-based environmental educators in Florida is the improvement in the quantity and quality of programmatic ideas available to them. The materials designed in cooperation with our Project have been very popular and one can see the impact in the programs and materials of environmental educators througout Florida.

11. Geographic area served by the Project (check one)

____ Urban	✓ Metropolitan	____ Suburban
____ Rural	____ Statewide	____ Other (specify)

12. Prior History of the Project (check one)

____ New Project	____ Expansion or improvement
✓ Continuation of CSCE Project*	____ of a non-CSCE project
____ Revision of CSCE Project*	____ Other (specify)

* List previous project I.D. number(s): 74-125-004

13. Faculty Involvement (List the faculty members involved in the project, the nature of their activity, their academic discipline, and the percentage of their time spent on the project).

Faculty	Activity	Discipline	% of Time
Rodney F. Allen	Project Director,	Social Education	50%
Anna S. Ochoa	Social Education and Evaluation Specialist		10%
George Dawson	Science Education		10%
David LaHart	Project Associate, 12 months) Environmental educator		50%
Joel Dawson	Research Associate (12.3 weeks)		33%
Rosalyn Tillis	Temporary Staff (OPS)(14 weeks)		50%

14. Student Involvement (If applicable, indicate the nature of student involvement in the project as well as the number of students engaged in each activity)

A. Instructors
B. Interns
C. Consultants (Technical Assistance)
D. Researchers/Data Collectors
E. Other (Specify in each instance)

Activity	No. of Students
NONE	

15. Demographic Data

Demographic data on all actual participants should be collected and reported for each project. The data should be summarized in terms of sex, age, education and occupation. In addition a brief narrative of the general characteristics of the participants should be included (i.e. were they city councilmen, upper level managers, housewives, etc? Were they the group for whom the project was intended?)

I. Demographic Summary: * (SEE Page 8 for racial breakdown of population)

Males 481 Females 518

A. Age

Under 21:	11	18
21-35:	350	375
36-55:	100	75
Over 55:	20	50

B. Educational Level (Data unavailable; mostly college educated)

Elementary:		
Junior High School:		
High School:		
College below baccalaureate:		
Baccalaureate:		
Graduate or Professional:		

C. Occupational Classification (Data unavailable; mostly professional and semi-professional)

Professional:		
Semi-Professional		
Skilled:		
Semi-Skilled:		
Unskilled:		
Other (specify):		

II. Narrative Description:

Several groups in the workshop data were heavily black and minority group members as per the objectives for the year's project. Since the workshops were designed for adult community leaders, the dominant age/education groupings were in the professional-semi/professional categories and in the middle age categories. In all cases, the workshop participants were leaders in a group which they represented, ranging from Girl Scouts to Senior Citizens, religious teachers to science supervisprs in school systems.

A colete listing of the groups may be found on page 8.

* This data includes only the workshop groups (999 persons) and not those served in the community programs[!]

16. Project Materials (Describe the materials produced for and by the project (i.e. curriculum materials, films, etc.) and indicate whether copies are available for dissemination).

(SEE ATTACHED: COPIES AVAILABLE THROUGH ERIC WITH THIS REPORT)

17. Express your judgement on the relationship of this project to the overall State program of Community Service and Continuing Education. (Title I HEA)

Environmental Quality is one of the four basic concerns in the Title I HEA Florida program. Our Project is directly involved in environmental awareness and education which is central to that State Concern.

Evaluations of our Project and our materials by the State Administrator of Title I and his assistants have been very, very positive. Our re-funding for the 1976-77 year is one indication of this assessment.

Our work in establishing an informal communication network among State environmental educators in post secondary education is consistent with the state plan and is a feature of our Project which we hope to expand and intensify during the coming months in cooperation with the Florida State University System and the Florida Office of Environmental Education.

APPENDIX

So You Want Some Environmental Education Ideas?

Well, the Florida State University's Title I, HEA 1965, Project has produced thirty-five booklets of such ideas working with adults in Tallahassee.

Four volumes of instructional material, along with the Project's final report, are available at cost from ERIC (Educational Resources Information Center). Each item is cited in Research in Education (R.I.E.) and may be ordered from:

ERIC Document Reproduction Service
Leasco Information Products, Inc.
P.O. Drawer O
Bethesda, Maryland 20014

Individual volumes may be ordered in microfliche at $.65 per title. The cost of documents in hard copy is $3.29 per one hundred pages.

Ways to Environmental Education, Volume I
ED 100 734 R.I.E., May, 1975, $6.58 HC; $.76 Microfiche.

Ways to Environmental Education, Volume II
ED 105325 R.I.E., July , 1975. $6.58 HC; $.76 Microfiche.

Ways to Environmental Education, Volume III
ED 106213 R.I.E., July , 1975, $6.58 HC; $.76 Microfiche.

Ways to Environmental Education, Volume IV
ED 107579 R.I.E., Oct. , 1975. $3.29 HC; $.76 Microfiche.

Ways to Environmental Education, Final Report
ED 107583 R.I.E., Oct. , 1975. $1.95 HC; $.76 Microfiche.

INDEX TO EACH VOLUME OF INSTRUCTIONAL MATERIAL

VOLUME I

1. Environmental Sensitivity, Leon Alternative School Staff (All ages)
2. Ten-Minute Mini-Walks, Nims Middle School Teachers (Middle School)
3. Girl Scout Activities, Girl Scout Leaders (Secondary School)
4. Little Folks Activities, Leon County Teachers (Early Childhood)
5. Action Projects, Sierra Club (All ages)
6. Trees, University School Teachers (Elementary School)
7. Humane Education Activities, Leon Humane Society (All ages)
8. Ants, Wakulla County Teachers (Elementary School)
9. Trees, University School Teachers (High School)
10. School Science Activities, Leon County Teachers (Secondary School)

VOLUME II

1. STEP Booklet, Leon and Bay County Teachers (Elementary and High School)
2. K-3 Activities, Florida Association for Children Under Six (Early Childhood)
3. Trees, Blessed Sacrament Teachers (Elementary School)
4. Trout Pond Activities, Girl Scout Leaders and U.S. Forest Service (Handicapped Persons)
5. North Florida Wildlife, Leon County Sportsmen Association (All ages)
6. Handicrafts, Girl Scout Leaders (All ages)
7. Environmental Lifestyles, Environmental Action Group (All ages)
8. Swamp Explorations, Museum Educational Staff (Secondary School-Adult)
9. The (1880s) Pioneer Farm, High School Teachers (High School Social Studies)
10. Wide Games, Girl Scout Leaders (Secondary School-Adult)

VOLUME III

1. Museum Development, Museum Staff and Board (All ages)
2. Transcending: Humanistic Environmental Education, High School Teachers (Secondary School-Adult)
3. The Animals at the Museum, Natural Bridge School Staff (Middle School)
4. Wildlife Activities, Apalachee Audubon Society (Secondary School-Adult)
5. Creativity, Adult Literacy Council Staff (All ages)
6. Herbs, Tallahassee Garden Clubs (Upper Elementary to Adult)
7. School Volunteer Activities, Leon County School Volunteers (Elementary)
8. Reading Activities, Tallahassee Adult Literacy Council (All ages)
9. Environmental Feelings, Tallahassee Early Childhood Educators (Elementary)
10. Energy Activities, State Energy Agencies (High School)

VOLUME IV

1. Springtime Tallahassee History, Committee of Springtime Tallahassee (Adult)
2. Animals at the Museum, Leon Headstart Teachers (Early Childhood)
3. Community Participation in Environmental Education, High School Teachers (High School)
4. Big Bend Cookbook, Museum League Members (All ages)
5. History of the Tallahassee Junior Museum, Museum Board Members (Adult)

HOW DO I GET INVOLVED?

For additional information or to arrange a workshop program, please call or write:

David LaHart or Rodney Allen
Environmental Education Project
426 Hull Drive
Florida State University
Tallahassee, Florida 32306
(904) 644-5769

This Project is funded under the provisions of Title I, Higher Education Act of 1965, through the State University System of Florida.

A COMMUNITY ENVIRONMENTAL EDUCATION PROJECT

TALLAHASSEE JUNIOR MUSEUM

AN INVITATION FOR YOU

Sponsored by --

The Tallahassee Junior Museum

The Environmental Education Project, Florida State University

WHAT'S HAPPENING?

Adults from community organizations are meeting at the Tallahassee Junior Museum to learn and to teach about environmental matters of concern to everyone.

This co-operative community project hopes to expand and broaden the educational uses of the Tallahassee Junior Museum through the joint effort of the Museum staff, personnel from FSU's environmental education project, and adults from a wide variety of community groups.

Programs will be held between July, 1975, and April, 1976, on-site at the Junior Museum. Workshops will be offered at the request of persons who want to participate and each workshop will be designed to meet their interests and needs.

The project staff and participants will use a variety of environmental encounters, and then, the staff will help the participants in each workshop group to design and implement environmental experiences for their own community organizations.

WHO'S COMING?

Everyone! Scout leaders. Teachers in public, private, and religious schools. Sunday school teachers. University service organizations. Senior citizens. Bicentennial groups. Civic and religious groups, Garden Clubs. Early childhood educators. Headstart teachers and parents. Humane and wildlife groups. Anyone and everyone!

Anyone may arrange for a workshop by calling the Project office, arranging the most convenient time for the workshop to be held, and mentioning any special topic or area which is of special concern to the participants.

Anyone may arrange to join a previously scheduled workshop. Call the Project office and let us know your interests and the times which you are available.

WHEN?

Any time that is convenient for you and your colleagues. . .mornings, evenings, afternoons, and weekends. You name it!

OK. HOW MUCH?

No fees are charged. No costs for materials. This project is a co-operative community project.

WHAT'S OUR "AREA?"

Primarily Leon, Jefferson, Wakulla, and Gadsden Counties.

WORKSHOP LEADERS

Joel C. Dawson
David E. LaHart
Rod Allen

BECOMING ENVIRONMENTALLY AWARE. . . .AND HELPING OTHERS DO THE SAME

Prepared by

Rodney F. Allen
David E. LaHart

July, 1975

If you pull one dangling cord of nature, you begin to unravel the whole fabric.

--Joseph Sittler

In recent years newspapers, magazines, and television have reported an environmental crisis. Environmentalists, and occasionally politicians, have told us about pollution and our adverse impact upon the natural world of which we are a part. Teachers and students have also been concerned about the environmental crisis and they have gone forth from their classrooms to see pollution and environmental deterioration. In all of these efforts, the central theme seems to be that we must all become more aware of our environment and of what is happening to the natural world upon which all life depends. As Joseph Sittler suggests, more of us have to learn that we cannot tinker with Mother Nature without paying the price, and if we disrupt one natural process, we affect the whole system.

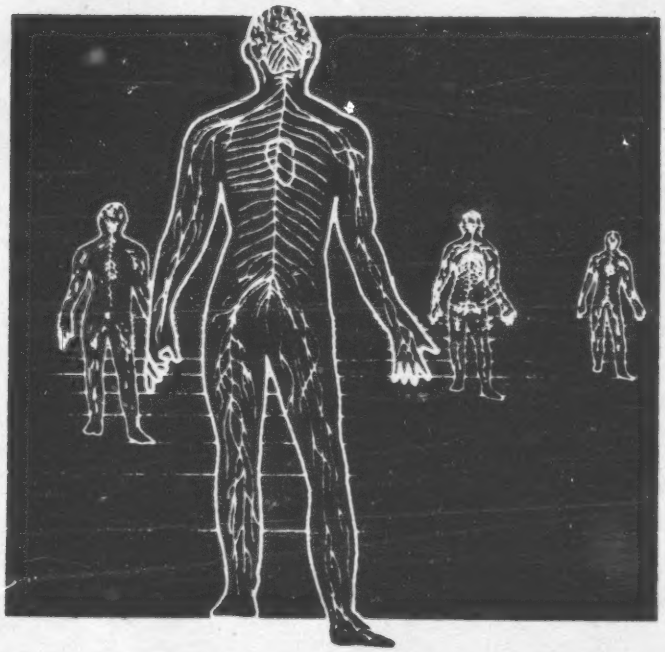
But what is awareness? This seemingly simple concept is actually more complex than it first appears. Webster's dictionary defines awareness as the mental process of being conscious, sensible, and awake. It means having the knowledge of something that is not obvious. Our word awareness comes from the Old English word for "watchful," which was based upon an older word meaning "wary." If we accept the word awareness as meaning conscious, sensible, and wary, of what are we to be aware in our environmental concern?

There are two dimensions to awareness. First, the awareness stressed in the discussion of the environmental crisis is an awareness of what is going on OUT-THERE in the world of nature. This kind of awareness involves the recognition of what one finds beautiful and ugly, of what really happens when cars emit exhaust, when sewage sludge is dumped in oceans, and when pesticides are poured on crops. As the miner needs to be wary of air quality and is aware of the moment his canary feels nausea, so we need to be alert to the cues to eco-deterioration. We need to know the implications and the consequences of our actions for the environment which we and all life forms call home.

The second type of awareness is not often discussed in connection with the environmental crisis, but is critical to shaping the way in which we act in the natural world. It is awareness of IN-HERE. A person watching the sunset over the ocean is aware of what he calls beauty --that is OUT-THERE

awareness; but to be conscious of what one feels and why one feels that way when watching the sunset is the essence of IN-HERE awareness. This is self-awareness, knowing what one feels, values, and finds meaningful, and knowing why and how he or she feels, values, and finds meaning. This IN-HERE awareness involves self-knowledge, insight into one's thinking process and one's deep attitudes toward life.

Together, OUT-THERE awareness and IN-HERE awareness are the first major step in environmental concern. Awareness is the basis for environmental action. The following activities will help you become increasingly aware in both dimensions, IN-HERE and OUT-THERE. There are suggested activities for helping others to become environmentally aware. But before turning to those activities, reflect upon the wisdom expressed in Margaret Mead's comments on an aquarium and a new way of being aware:



Now, ten years ago we could say that it was a very good idea for urban people to have an aquarium, and that looking at the aquarium they got some notion of a balanced environmental world. But they also got some notion of playing God. If they had tropical fish, all they had to do was to unplug electrically heated aquariums and the fish died. The notion of man as someone who can plug or unplug the system has got us in the difficulties we are in. We need a model where we are as it were in the aquarium, too, and depend on the balance of temperature and water and animal life and plant life within it, and some way in which we can see ourselves as an essential component of the environment.

--Margaret Mead, Testifying on the Environmental Quality Education Act, 1970

PERSONAL AWARENESS

Minnows play an important role in the food chain in lakes and streams. Obtain a minnow seine and wader. Seine some minnows and any other living organisms that are in the water.

Place these minnows and organisms in an aquarium in the classroom and observe the interaction between them and other organisms.

What do minnows eat?
Do you have more or less organisms after a few days?
Are there more or less green living plants?
Why are minnows important? How do they benefit others?

Release the minnows where you found them.

Watch a honey bee. Record observations.

Visit a honey bee farm and report the functions of the queen, drones, and workers.

How does the honey bee collect honey from flowers?
Why would honey bees live in certain areas?
Would it be easy to raise honey bees?
How are bees and humans alike? different?

A sense of value especially through wild flowers is essential to the well-being of human beings. Different colors have an effect on our personalities.

Take a walk this afternoon and look for wild flowers. List ones you can identify.

Sketch those you cannot identify.

How would you like to live in an area where there were no green plants? Would this affect your own life?
What would change if all wild flowers turned to stone?

Extra: Which wild flowers may be found in your area?
Could you establish a garden of your own using wild flower seeds?

Observe birds at the Museum. Choose a bird in the area and observe: (legs, eyes, beak, wings, calls, color, flight).

Notice the shapes of beak, feet, and wings.

Listen to songs of birds. Record or tape calls.

Build a bird feeder, a bird house, or water container for birds.

Why are birds different colors?
Are birds valuable to our environment?
How can you protect birds?
What can you do to invite birds to your area?

Personal Awareness

1) Stand on a busy street corner in your town. List the sources of as many sounds as you can identify. How does each sound make you feel? How does the whole combination of sounds make you feel?

Try to determine what sounds there are "happy" and which ones are "sad" or "angry." Why did you categorize them in this way?

2) Walk by the seashore or along a mountain path, pretending you are an orchestra conductor. Assign musical instruments to each of the sounds you can identify, and justify your decision.

3) Carrying a cassette tape recorder, walk around your community, classroom, or a rural area. Later, in your room compare the sounds and try to identify some of them. Are you surprised by what is on the tape?

4) Find your community's newest housing development or shopping center. Learn who owns the property and write to the owner, asking what plans he has for protecting the environment within and around his property.

5) Drive or walk around your community. Find at least four areas which have been maintained as natural areas (parks, wooded areas, ponds, etc.). Now go to your city or county zoning office and find out how those areas are zoned.

Try to discover whether there are any plans to rezone these areas for industry or commercial development.

6) Individually or in small groups, get students to examine a flower silently. Then, when ready, ask them to "dance out" a flower trying to attract bees. How does it feel?

Once students have "warmed" to the idea of such a performance, ask them to act out the life cycle of several of the following: alligator, sea turtle, deer, jack rabbit, gopher, moss. Follow this with a discussion of feeling and the significance of such life cycles to man.

7) Imagine that you are walking with friends and find a dead bird. How do you feel? What do you do? Is this action satisfying?

8) Examine some moss collected from the woods. Look at it closely. How does moss live? Why does it live? Students might also try this exercise for a spider, a crow, a leaf, some grass.

9) In groups of two, where one person is blindfolded and acts "blind" take a tour of the classroom or schoolyard. The "blind student" must depend upon the other student who serves as a "guide." If possible, try this on a city sidewalk, a ghetto playground, or a woodlot. After such a "trust walk" sit down and discuss your impressions and feelings about this experience. Communicate with your guide and other classmates.

10) Sit on the classroom floor alone. Cover yourself with a sheet. What does it feel like to live in such little space? Examine your little universe -- the little spaceship under the sheet. What do you think about? Try this outside in a wooded area. What/who shares your community under the sheet? Are your companions interesting? Why?

11) In class, sit on the floor and circle yourself with a piece of yarn, six feet in diameter. What does life in this little space feel like? What can you do in this space which is important to you? Act out some of these things. Is it lonely?

12) Use a microscope and examine a drop of water (drinking water, sea water, or swamp water). See the microorganisms. How do you feel about seeing this life which was not apparent before? What would it be like to live the life of an amoeba? Are amoeba worthwhile? Think about your answer.
13) Give each student a pear. Ask them to close their eyes and get to know that pear -- to experience it. What's it like? Really like? How do you know? How did you get your information on what the pear is like? Remember that your eyes were closed!
14) Ask students to mirror natural occurences which happen around them. Lie on your back and be clouds, stand up straight and be trees, etc. Then, sit down together and talk about your thoughts as you did this.
15) In a park or in the classroom, examine a flower for four minutes. What did you "see" when you examined the flower? Describe what you saw. Compare that to what you felt.
16) Now think you are a bee. Look again at the flower silently, After a few minutes, describe how you "saw" that flower. Was it different from before? How? Why?
17) Lie on your back and imagine yourself floating down a gentle river. "See" birds, trees, and the sky passing overhead. What do you feel? Where are you going?"*
18) Walk around outside without your shoes. Don't talk to your classmates, but concentrate on what it feels like. Try your schoolyard -- a city street -- the country grass -- a sandy beach.
19) Get a painting of some natural scene, especially a Taoist or Zen painting. Look at it closely and fit yourself into that painting. Where do you fit? How? Why? How do you feel in that painting? Who are you?
20) Take a walk (or imagine one) in the fog. How do you feel? Can you explain why you feel this way in the fog?
21) Visit your city dump to see how trash is disposed in your city or town. Write a poem to garbage -- the garbage from your house and your neighbor's homes.
22) Get your principal to turn off the air conditioner for two school days in hot weather. Is it worthwhile to save electricity, and thus, curb air pollution?
23) Stretch out on the carpet and close your eyes. Picture an animal. Do you see that animal as a friend? If he pictured you, would he see you as a friend? Are you sure about your answer.
24) Take a special field trip. When students report to school one morning, transport them to a "field trip spot" where they must communicate nonverbally with their fellows about some common experiences . . . or experience some common events relative to the environment. Let students freely decide upon what to communicate about in this situation.**

* If students have difficulty with this exercise, show the following film: Sky. 10 minutes. color. 16mm. Contemporary Films, 828 Custer Avenue, Evanston, Illinois.

** If students have difficulty with this exercise, show the following film: The Smile. 18 minutes. 11mm. color. Contemporary Films. The film portrays the awareness of a young Buddhist novice.

Visits to natural areas:	a State park's natural or wilderness area a nature trail a national forest or park a city park an outdoors center a bird sanctuary or game preserve a farmer's dove field, woodlot, or marsh a seacoastal area, pond, or caverns
Visits to man-made environments:	a school building, a school yard a main street or industrial park a ghetto area a financial district or shopping mart

Helping Others To Become Environmentally Aware

1. Hold an environmental film festival at school, at the library, in a shopping center, or in a downtown park. Show a variety of short films. Use several projectors and some slides.

2. Establish environmental outposts where colleagues observe community environmental goings-on. When something significant happens, send out a press release to the media. For example, open burning, massive land clearing, roadside trash piles, smoke pouring from stacks at nite.

3. Conduct a literary contest for all age groups. Arrange to publish (e.g., mimeograph) the works by the winners. Give out awards.

4. Monitor streams and/or air quality in your community. Report directly to the public.

5. Hold a slogan contest. Print up the best on bumper stickers and distribute. Involve all sectors of the community.

6. Conduct a public art show. Mark off a plot on the edge of town or on the beach. Get everyone to pick up the little and make something "creative" or "useful." Award prizes if you want -- but everyone is a winner. They have something to keep and they have a cleaner environment!

7. Arrange a skit nite at the local firehall or school. Get the "power structure" to participate (politicians, lawyers, teachers, religious leaders, etc.). Sell tickets with the proceeds going to a local charity. Make sure the skits have an environmental message.

8. Write some really fine speeches on environmental issues and set up a "Speakers' Bureau" at school for community groups. Don't forget to illustrate your talks with good slides of what's going on.

9. Using the tape recorder for radio and a video-tape recorder for TV, do some spot announcements. Get them on ETV, TV or radio programs.

10. Work with the modern dance group to do a community program on the environment.

11. Get the school principal to turn off the water for a day. Or to turn off the electricity for a day. Or to turn off the air conditioner or heat for a couple of days. Collect data on student-teacher reactions.

12. Set up a coffeehouse in school or out in the community. Conduct rap sessions about environmental issues.

13. String banners across streets with environmental messages. Make banners to hang in public places. Get a message across.

14. Arrange with several schools to participate in an ecology parade. Deal with local or State issues. Have bands. Clowns. Floats. Cheerleaders. Politicians. Environmental heroes.

15. Hold a bicycle race for environmental quality. Get radio-TV personnel to participate to be sure of publicity. All contestants must carry an environmental poster with their number on it.

16. Try #15 as an egg roll or as a scavenger hunt.

17. Conduct a street art festival stressing "Nature." Or hold a music festival or a drama festival, or a storytelling festival stressing "nature."

18. Throw a community fish fry or banquet to get people together to rap on environmental concerns.

19. Publish and distribute a booklet on how to save energy and paper waste at Christmas.

20. At the local shopping mall, set up a Teahouse where tired shoppers can stop for tea and a rap on "Man and Nature." Use slides and poetry too.

21. Work with local history buffs to put together displays on the Man-Land relationship in your area over the past 100 years. Get the displays into schools and into the community.

22. Make musical instruments of natural materials. Put together an orchestra and do some community performances. Stress NATURE in your music as well as your instruments.

23. Get the population growth projections for your community. Do a slide show with the projections and their likely implications. Present the show out in the community.

24. Do a slide show on the historically growth of population in your area. Show the results in your place. Present this to community audiences.

25. Compile an environmental songbook. Print it up and distribute to Scout and other community groups.

26. Organize a retreat for a weekend where members of your community can go and together write short stories and playlets on the environment. Try to get diverse age groups involved.

27. Hold a folk-art, on folk-music, "be-in" to lament the plight of the bald eagle -- symbol of a people.

28. Do a series of information flyers (one page) on various environmental issues (i.e., fire ant controversy, persistent pesticides, multiple use concept in national forests). Place in holders out in the community -- marked "TAKE ONE."

29. Make a set of puppets and put on environmental playlets in schools. Make symbolic Indian puppets and masks to do Indian myths which have environmental messages.

30. Do a pottery project where you use the good earth to make pots. Then, plant local flora in them. Give the plantings away to friends in the community and environmental heroes, each with an environmental message.

31. Make mobiles, murals, or shop window paintings out in the community -- each with an environmental message.

32. Do some graffiti boards and collages in school with environmental messages.

33. Write several original plays and enact them in a "street theater" setting. Let appropriate officials know what's up prior to setting forth.

34. Load the school and local newspapers with letters, book reviews, photos with captions, and short articles on local environmental problems.

35. Stand outside the gates at sporting events to hand out fortune cookies with environmental message -- a prediction on our future.

36. Do an article for a local magazine and illustrate it with photographs or sketches.

37. Hold a teach-in on the local environment. Get civic and environmental groups to participate. Arrange a vegetable lunch to help attract people.

38. Document what has happened to a stream, a piece of ground, a body of water. Present your findings in a photo essay on a wall in a shopping center. Don't forget to get permission before placing the photos.

39. Conduct a community awareness survey to see where people <u>are</u> on environmental concerns. Do they know? Do they care? Are they willing to pay the price?

40. Get a spot on a downtown street, outside churches, or in a shopping center and set up a junk art gallery. Learn to weld and make your own art of metal junk.

41. Make some symbolic artifacts and perform the rites of others (i.e., Hopi or Navaho Indians) which express a relationship to the environment different from Western man. Perform in schools and in the community.

42. In a corner of the student commons set up a parachute -- upside down. Invite people to crawl in the bottom (through the hole) and rap on environmental issues. You can play a cassette tape of some heavy environmental music. Or a friend can sit outside with a slide projector and play environmental slides against the side of the 'chute which look great from inside....It's like sitting in the ocean, or being at the beach, or climbing a mountain (depending upon the slides).

43. Get information from your county agricultural agent and from natural foods authorities (also try books in the library). Develop a model school or backyard garden for people and wildlife. Invite the community to visit and promote gardening for food, beauty, and wildlife.

44. Adopt a tree. Have every member of your class adopt a tree and care for it and care about it. Encourage others to do the same.

45. With information from EPA and other public and private agencies, conduct a public information campaign on automobiles and energy use (also pollution?). Write and distribute leaflets for persons about to purchase an automobile.

46. Write to the National Wildlife Federation and obtain information on their backyard refuge program. Conduct a neighborhood campaign for backyard refuges. Don't forget your own yard!

47. Study overpopulation of domestic animals in your community (i.e., abandoned animals running loose). Report to the public on what is being done about this and on what, in your judgment, should be done. Muster public support for action, if action is needed.

48. Examine the use of pesticides in the production of your food supply. Consider the costs and benefits of using, or not using, pesticides. Depending upon your conclusions, conduct a "Buy Wormy Apples and Blemished Oranges" campaign or a "Happy-Face Citrus for Man and Life" campaign.

49. Organize and conduct a community forum on "Religion and Nature." Involve local religious leaders from a wide variety of faiths.

50. Arrange with your principal to run the school for a week without electricity. Do reports on what it is like to be without power and invite parents and the community in to discuss the problems which arise and the adjustments which this involves. From this experience, develop and publicize ways to conserve electric power.

51. Work with the superintendent of Schools and other officials to set up an effective Council for School Campus Beautification. Develop a plan with the committee and work to implement that plan on all school grounds in your community.

52. Develop anti-litter, beautification, and/or environmental awareness flyers for local businessmen to include in their monthly billings.

53. Raise funds to obtain EPA and State Health department publications on garbage and solid waste disposal. Distribute this to civic agencies and school groups, promoting improved waste disposal in your community.

54. Put on a short one-act play that dramatizes the plight of endangered species and shows how they are related to each other and to man.

55. Make a terrarium with local plants and give it to someone who can't get outside too much.

56. Make a bouquet with weeds from a vacant lot or unmowed lawn. Give it to someone who doesn't get outside much.

DISCOVERING MORE ABOUT YOUR ENVIRONMENT

Edited by:

David LaHart
Joel Dawson
Rodney Allen

Materials and ideas in this booklet were edited from "Ways" booklets produced by Leon School Volunteers, Tallahassee Federation of Garden Clubs and Girl Scout Leaders. It is our hope that you will find them useful ideas to help your unique audience of learners discover more about their environment.

August 1975

Leaf Features Scavenger Hunt

Divide the class into 4-person teams. After you're organized everyone will scatter at the same time to search for leaves with the following characteristics. You or your teacher may wish to make up your own list.

Scavenger Hunt List

1. compound leaf
2. simple leaf
3. opposite leaves
4. alternate leaves
5. pinnate venation
6. entire margin
7. ovate shape
8. elliptical shape
9. serrate margin
10. lobed margin

Important Rules

1. You can use one leaf for more than one item on the list.
2. Don't pick any more leaves than necessary. If you can get a leaf from the ground, do so.
3. The team that finds all the items first wins. If no team gets all items, then the team that has the most in 15 minutes is the winner.

To the Teacher: Do not make the students memorize the words. The idea is to make them aware of the vocabulary, so they can use the leaf identification features information if they need it.

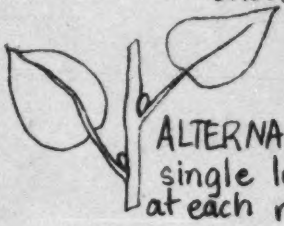
5. Observe a tree on the school grounds. Observe for a few months, go out about once a week and observe leaves, buds, seeds, flowers, bark, soil, and record. Enjoy the trees' growth cycle.
6. Measure you finger tip to finger tip length. Record. You can use this information to measure the circumference of a tree.
7. Choose some movies you want to see from the list at the back of this booklet.

IDENTIFICATION FEATURES of LEAVES

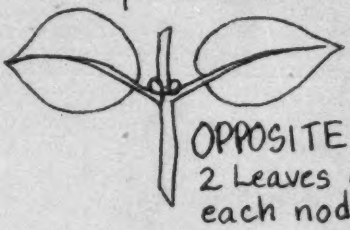
I. Arrangement

FASCICLED: bundles of 2 to 5 enclosed at base by sheath

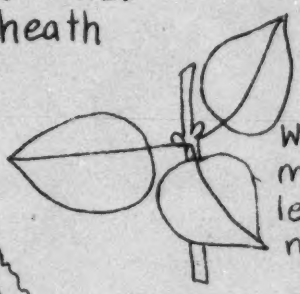
CLUSTERED: bundles without sheath



ALTERNATE: single leaf at each node

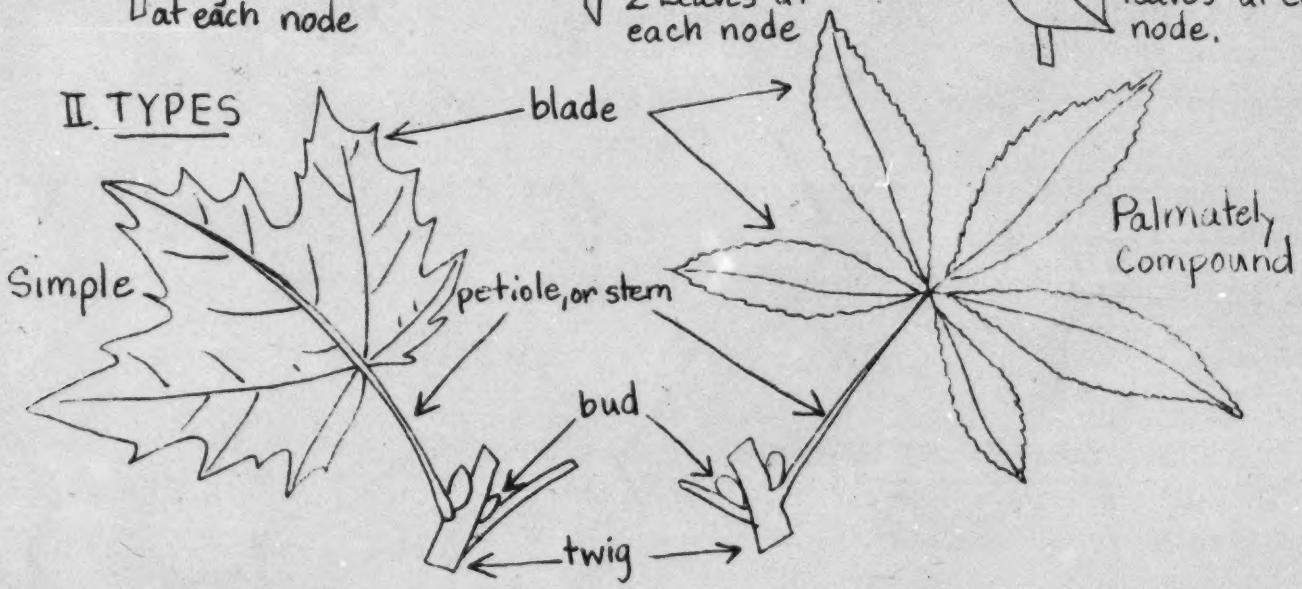


OPPOSITE: 2 Leaves at each node



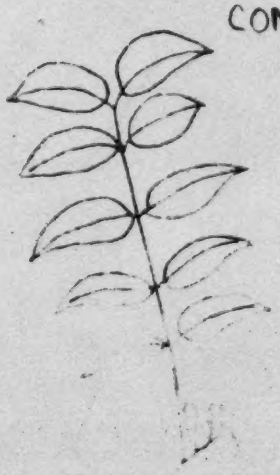
WHORLED: more than 2 leaves at each node.

II. TYPES

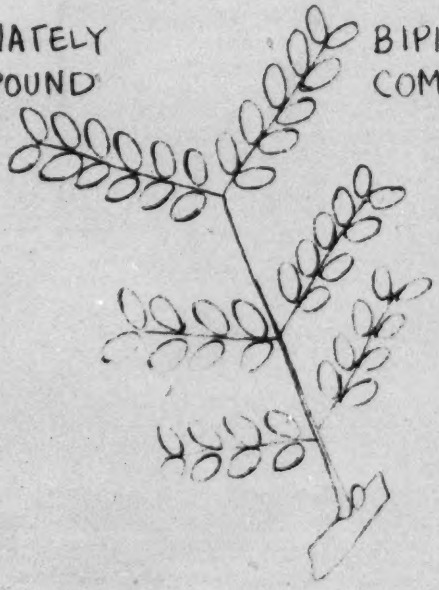


ODD-PINNATELY COMPOUND

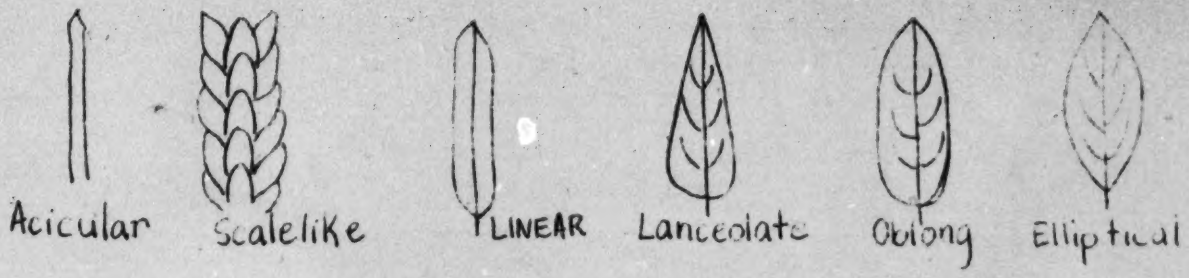
EVEN-PINNATELY COMPOUND

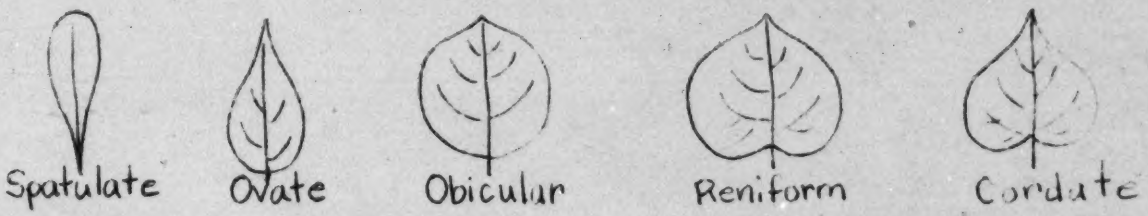


BIPINNATELY COMPOUND

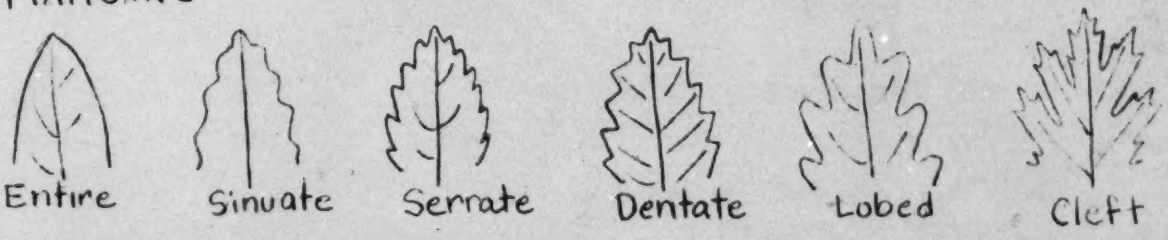


III SHAPES

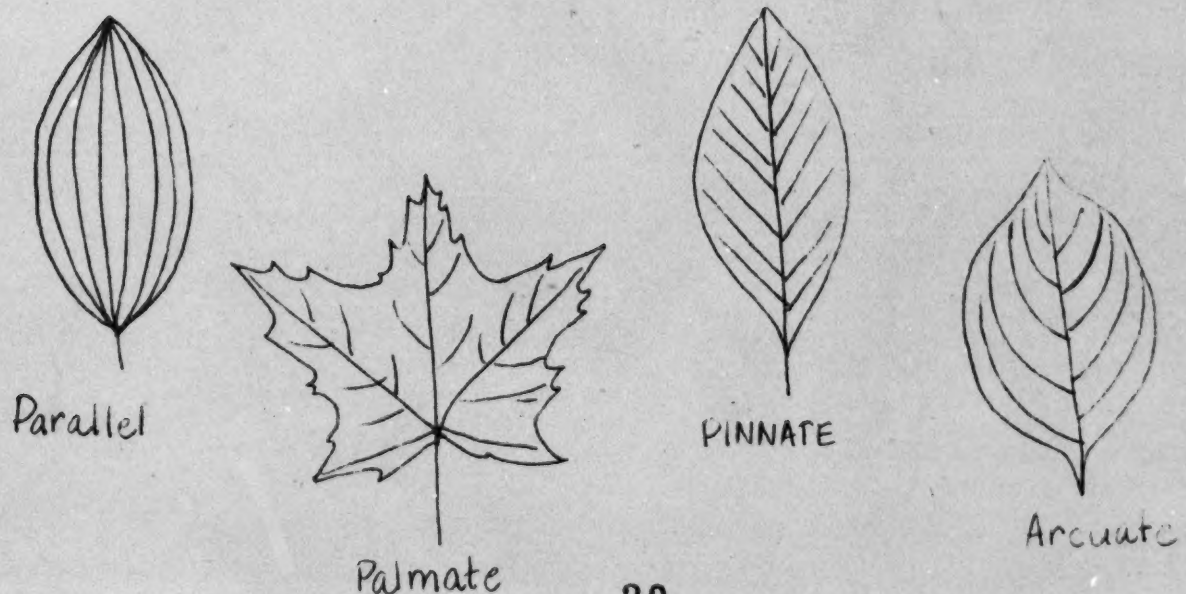




IV MARGINS



V. Venation



TREE Bingo -

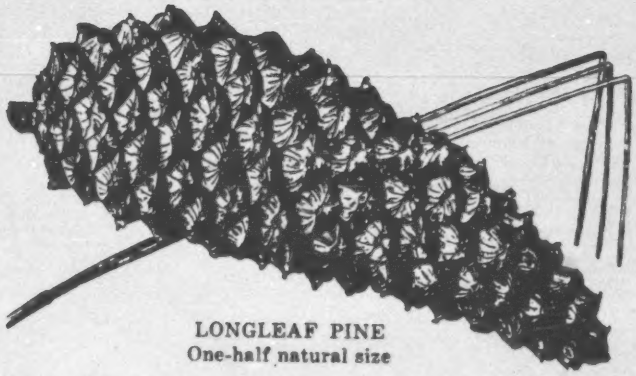
A fun way to learn tree identification is through TREE BINGO. Students can work in teams or individually to seek out the kinds of trees (or plants or whatever) found on the bingo card. The cards shown here contain common North Florida species; this list would have to be modified for South Florida.

Leaders can either take a "show me" trip to point out the individual species or, using the pictures provided here or in "Forest Trees of Florida" (free from the Florida Forest Service, Collins Bldg., Tallahassee, 32304) challenge the students to find the species. Participants must bring back a leaf, nut, flower, or twig that will provide evidence they found the tree.

Example: Bingo Card

T	R	E	E	S
MAPLE	GUM	SASSAFRAS	DOGWOOD	BEECH
SASSAFRAS	BEECH	MAPLE	LONGLEAF PINE	DOGWOOD
BEECH	MAPLE	FREE	MAGNOLIA	LONGLEAF PINE
GUM	DOGWOOD	MAGNOLIA	SASSAFRAS	MAPLE
MAGNOLIA	LONGLEAF PINE	BEECH	MAPLE	GUM

B I N G O



LONGLEAF PINE
One-half natural size

The longleaf pine has cones 6 to 10 inches long and needles 10 to 15 inches long.

FLOWERING DOGWOOD
One-third natural size.

Dogwood has a white, showy flower in spring, red berries during the fall and large buds during the winter.

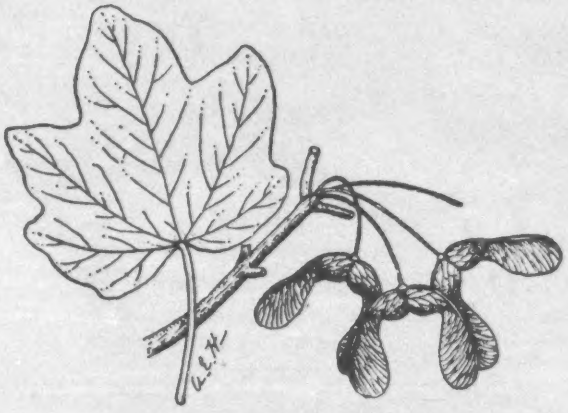
SOUTHERN MAGNOLIA
Leaf, one-fourth natural size.
Twig, one-half natural size.

The beautiful evergreen magnolia retains its huge dark green leaves year round.

AMERICAN SWEETGUM
Leaf, one-third natural size.
Twig, two-thirds natural size.

The strange seed pod and pointed leaves give away the sweet gum.

Red branch buds provide a handy characteristic for spotting the Florida Maple.



FLORIDA MAPLE
Leaf, two-thirds natural size.
Fruit, natural size.

AMERICAN BEECH
One-half natural size

Watch out for the pointed branches and smooth bark on the American Beech.

Sassafras provides food for wildlife and a delightful tea for people. Look for the strange leaves.

COMMON SASSAFRAS
Twig, one-half natural size. Leaf, one-third natural size.

A DOZEN

ACTIVITIES WITH WOODY PLANTS

Trees and Woody Plants

Choose three areas of the Museum for activities

Identify 8-10 trees or woody plants.

Desiduous trees -- shed leaves in winter

Evergreen trees -- Green year around.

Compare:

1. Leaf and/or needle structure -- as to shape, vein structure, base of leaves, tips of leaves, size
2. Bark patterns
3. Young vs. old
4. Quality of wood -- hard, soft, brittle, resiliant. Find out what makes them so.
5. Burning quality -- fast, slow, clean, smoky.
6. Root support system -- surface feeder, tap root system

Activities to accomplish above

1. Tree treasure hunt: Define 2 - 3 areas of museum. Send teams of 3 - 5 Scouts to different areas to find a leaf of several different kinds of trees. On return discuss properties of trees identified.

2. Tree scavenger hunt: Find parts of trees --
   a. leaves of specific trees, different leaves that have similiar tips, bases, vein structures, etc.
   b. pieces of bark -- or bark rubbings
   c. nuts, berries or blossoms.
   d. twigs from branches of different trees

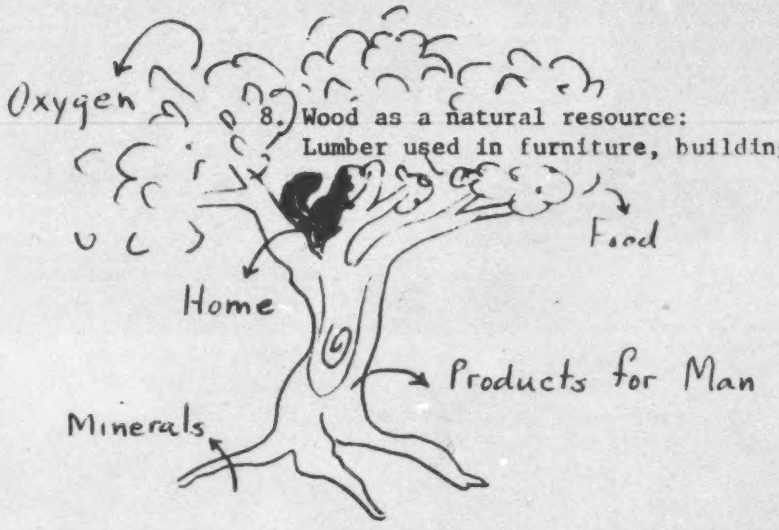
3. Study of Tree Communities versus Human Communities as to need for water, air, space, food, etc. How does each requirement affect growth?

4. Twig matching -- give players a twig. Send players out to find trees with matching twigs. Pick a leaf from the tree. Return and identify the tree by comparing leaves with leaves picked and identified by the leader beforehand.

5. Tree story. Pretend you are a particular tree. Write a story about your life as a tree would tell it.

6. Identify and locate the largest tree of a species (largest oak, pine, dogwood, etc.) in a certain area. Measure, and record height, trunk size (diameter and circumference) spread of branches, etc. What is the tree's age?

7. Make leaf collages, bark rubbings, leaf rubbings, etc.



8. Wood as a natural resource:
   Lumber used in furniture, buildings, commodoties, fuel

Americans use an average of 500 lbs. of paper per year. The demands for wood, paper and various products of the forest are enormous. Just to be able to print one edition of the Sunday New York Times for just 1 million people, 140 acres of timber (pulpwood) are needed.

--For 1 million people, how many acres of timber must be cut for a year or Sunday papers? For a paper each day? (Multiplying that amount for the millions of U.S. citizens makes one realize that it is a staggering amount of pulpwood that is used each year.)

--As our population grows, how will this affect our resources?

--Discuss space for homes and how this might affect the acres set aside for timber farms and our agricultural needs.

--What other wood products do we use? (Look around the room and see how many wood products you can name.)

--What about our homes? Do we use wood in their construction? Public buildings, etc.?

--How is wood used for fuel? (To make charcoal, alcohol, etc.)

--What other by-products do we get from trees? (Fruit, nuts, syrup, rubber, etc.)

--What kinds of trees are grown in Florida? How are they used? (Slash pine for pulp; citrus for fruit, Many ornamentals for decoration, etc.) Paper projects, wood products, paint products from wood.

9. In each study area, consider sounds, how trees are growing, animals that might live in the area, effect of humans on the area.

10. Build two fires -- use soft wood for one, hard wood for another. Observe the burning qualities of each. Which would make a better cooking fire, heating fire?

11. On going project -- Make a display of wood. Get rough wood from lumber company (small pieces), leave one piece rough; plane and sand another piece; plane, sand and finish with varnish a 3rd piece; locate a 2" section or original tree. Cut 1' length, cut one end diagonally, . Slice one side as follows:

12. Which trees and shrubs growing in natural settings? Which are desirable for planting around homes in the city? Consider raking leaves, dropping fruits, shade producing and other qualities for landscaping. Why would plants that occur in an area naturally be more suitable for landscaping than introduced ornamentals?

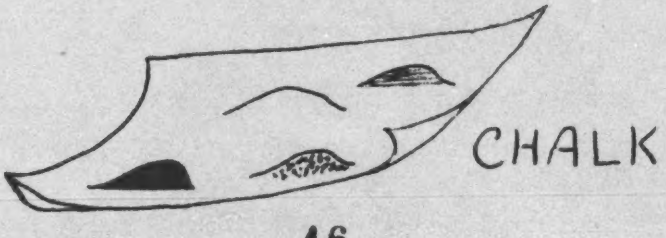
LESSON 3: HOW FAST CAN AN ANT RUN?

Did you know that math could come in handy to figure out some things that might tickle your curiosity? Well, it can. I should know. I have some things I've been curious about for a long time, but I can't figure them out without a little help... math help. (I never should have dropped out of the Ant Academy!) Would you help me? Oh, good. I'm glad. I'll finally get the answers to some things I've been wondering about! Oh, by the way, my name is Harv....Harvey Ant, that is.

It would probably be a good idea to look through this lesson and decide where would be the best place for this activity. Of course, you'll have to find a place where there are ants.

You will need to take this booklet, a pencil, a 12 inch ruler, a few bits of gravel or toothpicks to use as markers, and a watch. You will also need four small pieces of colored chalk, one piece of notebook paper, a plastic spoon or something to scrape against the chalk to make a small amount of chalk dust. Scrape the chalk over your piece of notebook paper, being careful to keep the colors separated. Take the chalkdust with you.

Okay, if you have everything...let's go!



PART I

1. Find an ant.
2. Dust him with one color of chalk dust so that you don't lose sight of him.
3. Make a note of his path by placing tiny markers (like your gravel bits or stuck-in toothpicks) behind him every so often so that you can keep track of how far he goes.
4. Track his path for <u>one minute</u>.
5. Go back and measure how far the ant traveled in one minute.

Repeat the above activity three more times with three different ants. Use a different color of chalk dust each time. Fill in the chart below after you finish with each ant.

ANT	INCHES TRAVELED IN ONE MINUTE
1	
2	
3	
4	
	TOTAL inches traveled

Look back at the chart and add together the inches traveled by all four ants. Put your answer in the box underneath the chart. In the space on the next page, divide the Total by 4. This will give you the average distance an ant can travel in one minute.

Put you division problem here.

4)_____ Inches

Average distance an ant can travel in one minute.

Change the inches in the above answer to feet by dividing your answer by 12 (the number of inches in a foot).

12)_____ Feet per Minute

How far can an ant go in one hour? _____ Feet.

\# of Feet per Minute _____

Minutes per Hour X _____

Feet per hour

A mile has 5280 feet in it. How many miles would an ant travel in one hour? _____ miles.

(This is the number of feet an ant traveled in one hour divided by the number of feet in a mile.) Figure your answer in the space below.

If Tallahassee is 6 miles away, how long would it take an ant to go non-stop to Tallahassee? _____ hours.

(Divide 6 miles by the amount of miles an ant goes in an hour. This will give you the number of hours it should take an ant to to to Tallahassee). Figure your answer here.

If a man could run a mile in 12 minutes, how far could he run in one minute? _____ Feet in one minute.

Figure your answer here.

Answer: $12\overline{)5280}$ 440 feet in one minute

The man is 200 times larger than the ant. If the man were the same size as the ant, how far could he go in one minute?

_____Feet (Divide your above answer by 200.)

Figure your answer here.

If the man and the ant are the same size, who can run faster?

_____.

PART II

In the space below, write a story about what could happen if you were an ant who suddenly became man-size. What kind of feelings would you have about your new situation? (use additional paper if necessary.)

OBJECTIVE

Help students follow a piece of trash from the roadside to its final destination. A good technique is a field trip to land fill operations or an incinerator. If a trip is not possible, identify and locate the sites on a city map and ask a resource person to explain their operation.

ACTION

Data on population increases in your community can be correlated with increases in land fill or incinerators to drive home the lesson of the need for recycling.

OBJECTIVE

ECONOMICS OF LITTER-THE COSTS OF LITTER

ACTION

Have students count the number of litter items on the schoolyard. If the area is too large or the quantity of litter too great you may assign your class to count only a certain area of the schoolyard.

After the students have made a simple count of litter items have them multiply the quantity times thirty-one cents (thirty-one cents is a good approximation of the cost to the public to pick up one piece of litter and dispose of it).

For example if the class finds 300 pieces of litter the cost to the community would be 300 x $ .31 = $93.00.

Then lead the students into a discussion about what they would do with $93.00 if they had it. Students will suggest hundreds of ways to spend money which they prefer over picking up litter.

This lesson in economics will help develop anti-littering attitudes in your students.

OBJECTIVE

UNDERSTANDING THE ENVIRONMENTAL COSTS OF PRODUCING PAPER

ACTION

Have the students collect the newspapers used in their home for a week. Weigh this and multiply it by 365 to determine approximate weight of newspaper each family would use in one year. Determine the total weight per year in tons for the entire class.

PROBLEM

If it takes seventeen trees to make one ton of newsprint, how many trees are used up for newspapers by the families represented in your class? Follow this problem by discussion of some possible harmful effects of removing trees, the possibility of using recycled paper to save trees, *conserving* paper in school to save trees, and other related subjects.

OBJECTIVE

GLITTER AREAS AT YOUR SCHOOL

ACTION

Designate some areas of your schoolyard as the "Glitter Area" for your class. It then becomes a simple task for your class to keep their area "glitter clean." Emphasize the clean appearance of your class areas as compared to other sections of the campus. If possible, encourage other teachers to choose glitter areas and set up healthy competition. Well kept areas could be rewarded by preparing a glitter award signed by the Glitter chairman of your local garden club. A good program would lead to an entire campus award which could be displayed in the principal's office.

MINI-WORLD

Take a ten-minute field trip out-of-doors. Find a comfortable spot and sit down on the earth, right in the middle of a five-foot circle. You may outline the circle with a piece of string or by scratching the earth with a stick. (Do it gently!)

--What does life in this little space feel like?
--What can you do in your circle?
--How long would you like to live in this space?
--Closely examine your space and list the living creatures who share your space.
--Invite two human being friends over. How does your space feel now? Invite two more.

Back in the room. Write a song, poem, or story about your mini-world and those who share it with you.

NATURE STINKS

Take a ten-minute field trip out-of-doors, using your nose. As you find things in nature with an odor, make a list and ask yourself:

--Is this odor one that ( ) I like or ( ) I dislike
--This odor makes me feel ( ) good or ( ) bad
( ) happy or ( ) sad
( ) healthy or ( ) sick
( ) relaxed or ( ) up-tight

--Is this odor a natural odor or an unnatural (man-made) one?
--Why do I feel this way about such odors?

Back in the room. Do one of the following activities:

1. Think back in your life. What was the best odor you ever experienced?
2. What was the worst odor? Write a little story about the time when you experienced the best odor.
2. Think about these smells: a woodsy smell, a field house smell, a seashore smell, a bus smell, and a leather smell. Draw a picture to show how you feel about one of these smells.
3. Some smells in nature are natural and some are man-made. Go to the media center and learn more about "air pollution." Find a way to share what you learned with others.

ARCHEOLOGY

Take a ten-minute field trip out-of-doors and pick up as much litter as you can in that time. Take the litter back to your classroom.

Back in the room. Pretend that you are an archeologist. You dig to discover bits of bones, pottery, and other objects so that you can tell something about the people who lived there long ago. Instead of finding pottery and bones, you have found this litter. What does each piece of litter tell you about the persons who live in your area? About their way of life, and their attitude toward nature?

ARE FOLKS ALWAYS PICKIN' UP AFTER YOU?

BIG AND LITTLE, BLUE AND BLEW

Take a ten-minute field trip out-of-doors. On a piece of paper, write down descriptive words for the things you observe in nature. For example, dark, rough, pale, large, etc.

Back in the room. For each descriptive word on your list think of other words:

--Synonyms: words with the same meaning
--Antonyms: words with the opposite meaning
--Homonyms: words with the same sound.

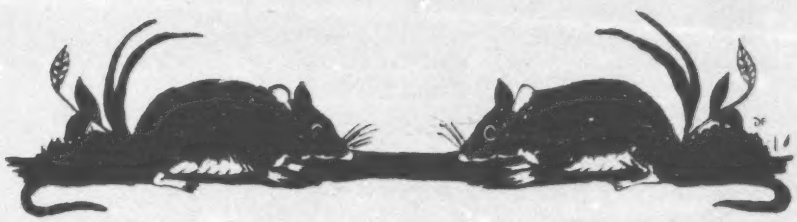
For example:

BIG		PALE	
Synonyms:	large, huge	Synonyms:	light, faint
Antonyms:	small, little	Antonyms:	dark, bright
Homonyms:	- - - - -	Homonyms:	pail

IMAGES

Take a ten-minute field trip out-of-doors. On a piece of paper, write down the names of ten natural objects.

Back in the room. In groups of three, share the words on your list. As you say the name of a natural object, ask the other two people in your group to tell what picture comes to mind. For example, if you say "tree," they should describe the tree that they see and how they feel about that tree.



YOU ARE A NATIVE AMERICAN

Take a ten-minute field trip pretending that you are an American Indian. Examine the place around you as if you were going to establish a campsite here.

1. What do you need to survive?
2. What does this place offer you? Take inventory.
3. Can you survive here? How?

Back in the room. Draw a map of your campsite. Talk about what you would have to do in order to survive in this place.

LEAF WALK

Take a ten-minute field trip in a wooded area. Walk among the dry leaves and pine straw. How does it sound? What would you hear if the leaves were wet?

Look closely at some leaves and some pine straw. Hold them up to the light. Smell them. Crumple them near your ear. Feel them with your finger tips.

Back in the room. Do one of the following activities:

1. Draw or paint a picture of some leaves.
2. Mount some leaves on colored paper, labelling each leaf.
3. Do a Bulletin Board with all the different leaves found on your school yard or at the Junior Museum.
4. Write a fantasy story involving leaves and you.

COLORING

Take a ten-minute field trip out-of-doors. Make a list of natural objects that you see. Beside each object on your list, write down its color.

Back in the room. Answer the following questions:

1. What is your favorite color? Why is it your favorite? What objects in nature are your favorite color?

2. How do colors affect your feelings? For example, how would you feel in an all-black room? How would you feel upon seeing a pink elephant or a purple tree?

3. Think about the colors of the natural objects on your list. Why are these natural objects colored the way they are? How might the colors help the objects live?

THE SHAPE YOU'RE IN

1. PROBLEM: How is it that living things get along so well in the environment?

THINGS YOU'LL NEED: Collecting baggie, construction paper, pencil and glue.

FINDING OUT: All living things interact with their environment. Some living things have developed structures to help them get along better in the environment (Example: Polar bears have thick fur to protect them from the cold). In the plant world, a necessary environmental element is sunshine. Only the green leaves can use the sun's energy. In this activity, collect leaves from the different habitats and place them in your baggie. (Try to take them from the ground so the bushes don't become bare! Take only what you need.) Label or remember the leaves, as to where you got them. Mount one or two leaves on only one side of your pages of construction paper. Punch holes in pages and join with string or yarn to make a booklet. On each page write what type of leaf (look it up), where you found it (swamp or forest area), and how its shape works to the advantage of the plant in the area you found it. (Does it help it get a lot of sun or very little?)

MORE: Find out why only the green leaves can use the sun's energy. If only the leaves use the sun's energy, what happens to some plants in the winter when the leaves fall off? Why do some leaves change color in autumn? Man no longer needs to adapt to suit his environment. He can almost control it. Explain how.
Is there any significance in the fact that originally races found near the equator had darker skin and hair and those found near Scandinavia and the Arctic had light skin and hair? Explain.

CAN YOU HEAR ME

2. PROBLEM: How do living things communicate?

THINGS YOU'LL NEED: Tape recorder (optional) and cassettes, a good pair of ears, and paper and pencil.

FINDING OUT: Choose a habitat on the museum grounds. Sit down and get comfortable. Be very quiet. . . soon the animals will continue their normal activities. Record or write down any sounds that you hear and

the time of day you heard them. Try to identify what made each sound. Does the sound tell you anything? Does it have a meaning to other organisms? Is it meant to warn or attract? How do you feel about each sound? Keep a log or diary for these sounds and the above questions.

MORE: Visit the same place at different times of the day. Do the sounds change? How?
Repeat the same activity at different habitats, and compare them with each other.
How do animals that live under water communicate? Talking is not always the best method of communication. People don't always say what they mean. What other ways besides talking does man use to communicate?

Reference: "Here a Sound, There a Sound"

BACK TO NATURE

3. PROBLEM: People talk about "returning to nature and the simple life." But are things as simple as they seem.

THINGS YOU'LL NEED: Camera (optional), notebook, pencil.

FINDING OUT: Many things in our world are interrelated. They may not be as simple as they seem at first! On the museum grounds take a series of pictures (or write a description on paper) so that a first thing is related to a second, the second is related to the third, and so on. . .but! so that the last picture taken appears to have no casual relationship to the first picture taken.

MORE: Have your negatives made into slides and give a "slide-show" to your class, explaining the importance of inter-relationships. (You can borrow a projector from your media center through your teacher.) Design a bulletin board for your teacher showing "Cause and Effect" (in other words, your first picture and your last picture.) Then show how the effect came about (all the in-between pictures.)
Spraying DDT on fields to eliminate insects has caused bird populations to decrease because their eggshells aren't strong enough to support the females' weight. Many farmers said: "We didn't spray the birds or their eggs. . .it's not our fault." Can you explain the missing steps to the farmer?

YOU CAN'T TOUCH IT BUT YOU CAN FEEL IT

4. PROBLEM: What is this thing we call power?

THINGS YOU'LL NEED: paper, pencil, camera (optional)

FINDING OUT: We all know that all living things need energy. Some non-living things need power or energy too. Cars for example. What is this stuff called energy? Where can we get some? In this activity go out on the museum grounds and note any signs of power. . .try to photograph any examples that you find! You'll have to use your imagination on that! Each time you find any power, answer this question. Where did this power or energy come from? Try to trace all energy back to one common source.

MORE: Visit the pioneer farm, note down how their use of power compares with ours today. Do you think we are careful enough about our uses of power today? If you were King of the World (you'd have lots of power) how would you see to it that everybody had enough power to last them a long time.
What is Power?
How do you get it?
How do you keep it?
How do you lose it? Where does it go?
Who has it?
If you used a camera, mount your pictures and make a bulletin board on power.

IT'S LIKE THIS

5. PROBLEM: Are there things in the natural world that can help us express our feelings?

THINGS YOU'LL NEED: paper and pencil, camera and/or tape recorder (not necessary, but helpful)

FINDING OUT: As you walk around the Museum grounds, find and bring back things that make you feel:

happy	beautiful	gentle
angry	afraid	cold
sad	tough	peaceful

You might bring back sounds, pictures, objects, or word descriptions. It's up to you.

MORE: Think of other feelings that you might find expressed in nature.

Try making up a list of colors. Then go out and record sounds that make you think of those colors.

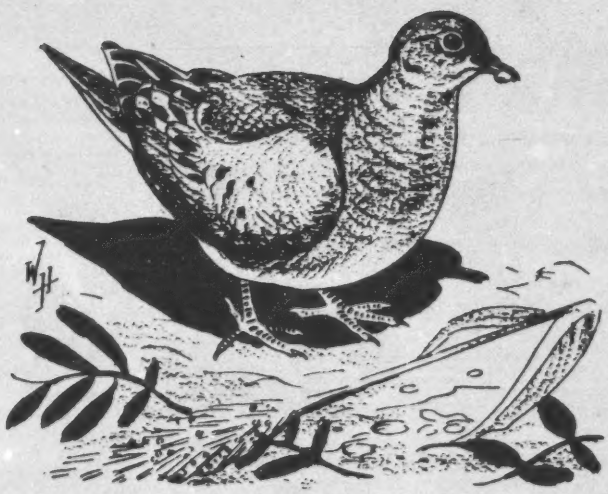
Arrange a scavenger hunt with a group of people. Each person must bring back examples of items on a list--colors, textures, shapes, etc.

TEMPERATURE'S RISING!

6. PROBLEM: How and why does the temperature of the soil vary from place to place? Does the soil temperature have anything to do with the kinds of plants that grow there? Do the kinds of plants have any effect on the soil temperatures?

THINGS YOU'LL NEED: a sturdy thermometer, a shovel or trowel, pencil and paper

FINDING OUT: Within a relatively small area -- an acre, for instance -- there may be many variations in the temperature of the soil and the vegetation growing there.



Go to three or more different sites (suggestions: an open grassland area, a lake shore, a wooded area, a plowed field). At each site, measure the temperature of the soil three inches below the surface. Also note the types of plants growing at each site.

What differences or similarities did you notice in the temperature of the soil?

Which sites had the highest surface and below-ground temperatures?

Which sites had the lowest surface and below-ground temperatures?

Were any sites nearly alike in temperature? If so what other things about these sites were similar?

Can you think of any ways that the soil temperature affects the plants growing at a site?

Can you think of any ways that the plants affected the soil temperature?

MORE: What do you think your findings might mean to someone trying to farm in this part of Florida? What could be done to change the soil temperature of a farm field? What might your findings mean to you if you were looking for a place to build a home and plant trees and flowers?

Cross Reference: "Hot and Cold Running Water"

OUTDOOR

ACTIVITIES (MOSTLY FOR ELEMENTARY SCHOOL STUDENTS) - - -

* ON THE TRAIL
* AT THE FARM

PREPARED BY

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ON THE TRAILS

1. Sit down; close your eyes; what do you hear and feel and smell? How does it make you feel? Imagine that you have been transplanted onto a deserted city street. How are the sounds different? How does it feel/smell? A bus goes by, and a car and a taxi; what sounds do they make? How do they smell? How do you feel? Gradually all the vehicles disappear, the ground gets softer and you find yourself back here in the forest. Now how do things sound to you? What can you smell here in the forest. Now how do things sound to you? What can you smell and feel? Where would you rather be? Relate to city planning -- what aspects of the forest quiet/calm can you bring into it?

2. What signs of man's presence can you see or hear? How do they benefit the plants and animals? How do they harm them? How do they affect the people who visit the museum?

3. Conduct an orchestra of sounds in the forest. Tape record. Parallel problem of "orchestra" of species/interdependence (niches).

4. Draw a creature that you would imagine living in the lake among the cypresses. How does he or she feel about your presence?

5. What scares you about being in the forest? Why should you be scared about some things? Why should you not be scared? Are there things that are scared of you?

6. Ask the students to recall any "human-like" gestures they saw in the animals. For example, the way a bear holds an apple or the way a fox scratches its head. This would be a good way to start a discussion on what makes humans human.

7. After watching the animals living in a protected environment -- ask the students to give their views on the so-called "Law of the Jungle"—survival of the fittest. Do we see it in operation at the Junior Museum? Why or why not? Also, can this be tied in with our society? Does this law hold true for humans also? The class can be asked to give examples backing their answers.

8. The class can be asked to state how the five senses were affected by the field trip. What things did they see that are not usually seen in a city environment? What strange or unusual sounds did they hear? Did they touch anything unusual?

9. Ask each member of the class to pretend they're one of the animals they saw. How would they feel about living in a simulated environment? This question could then be broadened to include humans. Are there any humans living in a simulated environment? Are they happy? Why or why not?

10. Construct from memory a map of the nature trails. Recalling signs, cages/fences and animals, etc. Answer the following questions if you can:

a. What did you like most about the nature walk?
b. What changes would you like to see made?
c. Which change would you like to see made first?
d. If you had a choice real soon, would you like to take the nature walk again? Why?

11. Make a list of all the vegetation and animals you recognized on the nature trail. Place a check (✓) by those that you were most familiar with. How did you become most familiar with these?

12. What sound did you hear on the nature trail that was unfamiliar to you? How did you find out what this sound was? How did the sound make you feel? Have you felt this way before? If so, when? Describe.

13. On your nature walk you encountered numerous signs. Try to recall as many of the signs as you possibly can. Which one of the signs had the most meaning for you? What do signs tell you about living? Were you able to read anything in the signs you saw that would help you in everyday living?

14. Close your eyes and take some deep breaths. Take notice of the smells of the trails. Take some more deep breaths, this time trying to remember the smells of the city. How are the smells different?

15. Close your eyes while quietly standing on the trails. What kinds of sounds do you hear? Imagine yourself in a city. What kinds of sounds would you most likely hear there? How are the sounds different?

16. What kinds of games would you play here on the trails that you could not play in your own neighborhood?

17. Look for some signs of man's presence on the trails. Can you classify them as "good" or "bad?"

18. Close your eyes and listen to the sounds again. Can you make an orchestra of forest sounds? (Include insect sounds, the wind, birds, people sounds.) What rhythms?

19. Who, or what, else might walk along these paths? Look for signs of foot markings on the trail that most probably are not human-made.

20. What are some things on the trails that might scare you? Why are you afraid? Role-play a scary situation. What are some things we ought to be wary of on the trails?

21. Push back some of the leaves covering the ground. What kinds of things do you see? Living and/or non-living? Look under rocks and fallen branches and do the same thing.

22. You have limits just like the animals in the cages. What kind of cage are you in?

23. Perceiving experience as interaction between oneself and the "others:" ask the students to close their eyes and pretend their hands were a completely new addition to their body. They've never seen them or felt them. Ask them to pick an object in the environment (with eyes still closed) and try to find out as much about the object and their hands through feeling the object as they can. What did you discover about your hands and about the object? If the object could feel back, how do you think it felt to experience your hands touching it? Would it have felt something hard or soft? Cold or warm? Gentle or rough?

24. Imagine the cages and barriers were not there and you were alone with the animals and trees. How would you feel? What do you want to do? What animals or things would be dangerous to you or frighten you? What would you try to do about them or your fears? Which animals might you try to make friends with? Why? Which animals would be dangerous for other animals? What would you do if you saw a wild cat trying to attack a duck? Would you intervene? Why or why not?

25. Imagine you are one of the animals. Begin by imagining your appearance has changed to become like the animal. Your face, hands, legs, your whole body has changed. Try moving around with this new "identity" and "talking" as the animal would. Would you see, smell, hear, feel things differently than when you are a human being? How might other animals and people react to you now? Do you like the way they react? Why or why not? Suppose a preditor was coming at you, what would you do to survive? What things do you enjoy doing now? Would you like to be this animal? Draw a picture, write a poem or a short story about this animal.

26. Is there something about the Junior Museum you would like to see changed? Can you do something to change it? Would you actually do it? Would you ask others to help you do it?

27. Before you go to the museum: list the activities which
    a. you want to see; (why)
    b. you want to listen to; (why)
    c. you want to act; (why)
    d. you want to collect; (why)
    etc.

Have small group discussions about the things which you are going to do (and why) at the Junior Museum and plan a schedule for your group activities. Each individual may have his own assignment to do as a result of the small group discussions.

28. While at the Museum, each group has continuous discussions about the things that are happening in front of them.

29. After the Museum: Have small group discussions about the things you did and did not do in the Museum.

30. Have a whole class discussion about the results of small group discussions. Teacher may list the items on the board: what each group saw, listened to, acted and collected. Then students categorize those things according to their similarities and put appropriate names for classification:

a. the things you saw; they may classify by animals, plants, flowers, nuts, etc.
b. the things you listened to; may be the sounds of animals, insects, wind, noise, etc.
c. the things you acted: may be touch, smell, observation, feeding, etc.
d. the things you collected; may be pebbles, leaves, nuts, litter, etc.

31. Draw a picture of your own vision of ideal museum or world. Put animals, plants, and things wherever you think ideal. Put yourself in, too.

32. Have a discussion about our environment. What are the realities? What are the ideals? What can you do to change our environment into the way you want? What are the things that you think you never can do?

33. Sensory experiences: List different tastes, textures, sights, smells, and sounds unique to the woods.

34. Role-play duck talk (another language--communications).

35. Search out shapes in nature that correspond to man-made shapes.

36. Look for patterns (like deer) that might be copied on cloth -- discuss protective coloration.

37. Compare cages to homes (limits to yards).

38. Animal names used in current language: foxy (clever, good-looking), sneaky as a snake, etc.

39. Why do squirrels scurry? What causes them to be scared? Are you ever scared? Why?

40. How do you find your way at the Museum nature trails? Do you have markers (helpers) to show you directions (limits) in life choices? What are they?

41. Animals are at home here; you are not. What do they do when they do not feel at home? What do you do?

42. The nature trail looks a million miles from civilization--suddenly an airplane breaks the stillness. We are never very far from man's influence? Is this good?

43. "Sense trips"--blindfolded you are led through the nature trails, after having been given the instructions: "You are a 'big ear' and are to gather as much data on this trip as you can -- only through your ears." Some children would be "big noses" or "big fingers." Following up the sense trips might be a group discussion keying on such questions as: which trip were you most comfortable making? Why? Which trip was most exciting? Why? Which trip gave you the most data? Which the least?

44. Sources of Information: How many sources of information are you aware of on the nature trails? What helped you to see all the different parts of the museum? What would you have done without these aids? Did any of these sources of information restrict your study of the Museum in any way? Would your trip have been more or less fun without these sources of information. Can you see parallels in: school, cities, travel, life?

45. Assign each student a 2' by 2' square of earth around the nature trail. Have them observe the square; its vegetation, contour, rocks, texture of earth, smell. . . making as many observations of this one piece of land as possible. Discussion would follow, including such questions as: What forces have helped to shape your piece of land? How have they shaped it? How does your land relate to the total of land surrounding it? Are there any clues in your square now that give you a hint as to what it might look like 6 weeks from now. (Perhaps it could be arranged for the group to return in 6 weeks to observe again their individual squares.)

46. Environment Discussion: Student would be instructed to walk through the various nature trails being especially observant of the animals environments, skunks, eagle, bears, turtles, snakes....which of the animals have the most natural habitat? Do any of the animals have completely natural environments? What were some of the limits on the animals' environments? What imposed these limits? For what purpose?

AT THE FARM

1. Imagine you were a child your age back in the time when this village was inhabited and alive. What did you do? What work, games, family chores? How is your life today different in respect to what is expected of you?

2. Stage a debate between someone who thinks life is more secure and satisfying in a small town like this and someone who thinks it makes you narrow and limited in your attitudes toward people.

3. Role-play a tourist from the year 2075, looking at our buildings and lifestyle. What would you say about it in comparison to the life you know?

4. Compare the "hardness" of life then with the difficulties we have to face today. What things can we buy ready made that they had to make for themselves or for their neighbors? Think about how much time was involved in their daily tasks. How does it compare with our lives? What can you say about quality of life and the things in it -- then vs. today?

5. Pick out one item in the blacksmith shop. What do you think it was used for?

6. Make a list of items inside the house that were made by the occupants. Make a list of items in the house that were bought by the occupants.

7. What things does you mother do in your house? What things would a mother do in this house? How are they the same or are they different?

8. So you think you could survive in this home environment? Why or why not?

9. Can you find any items in the area that do not fit in with the 1880s?

10. If you were a child living in this area during the 1880s, what kinds of games would you play?

11. What sort of things might have been expected of children in the 1880s that are not expected of children nowadays?

12. What kinds of things do you think about in bed at night? What kinds of things do you think a child who lived on a farm like this in the 1880s thought about in bed at night?

13. List the things (houses, pasture, animals, etc.) you have observed at the Pioneer Farm. Draw a picture of the farm as you have seen, then discuss the things in your picture. Why did the pioneers build or make those things (houses, pasture, variety of tools, etc.?) for survival? for fun? for what? How did they use them?

14. Suppose you should live on the farm from now on without any other modern supplies from outside the farm. What would you do first, second, third, etc. How would you feel about your life in this situation?

15. Suppose you should live on the farm from now on, but you can utilize modern facilities and supplies from the outside. Do you think you can make the farm better for you to live in using modern facilities? If you think so, how would you change it using what kinds of facilities? Or, do you want to leave the farm as it was without changing anything? Why? Draw the picture of your changed farm.

16. Compare your new farm with the old farm. What things are changed? What things are not changed? Classify the changed things. Classify the unchanged things. Generalize what kinds of things are changeable and what kinds of things are not changeable as the time changes.

17. It is Sunday afternoon on the farm in the year 1870. Mother is knitting, the children are playing in the yard, father is reading. No chores or work is being done. Is Sunday still a day of leisure, worship and rest? Do citizens have as much "leisure" time in 1975 as they did in the year 1870? Have the concepts of work, money and time become less valued or more valued in 1975 than in 1870? Do we spend as much "time" together doing family roles as well as the time spent together?

18. Much of the food consumed in the 1800s was grown on the family farm and the clothes made by the women in the family. Have we returned to some of these same practices in 1970? Why? What has brought the return of home gardening, the consumption of "natural foods?"

19. Has change (modernization) always brought progress? Has the new "American way of life" brought the best of everything? Were people "happier" in the 1800s? What are some of the changes that have taken place since 1800 that you would not consider progress? Would it be better to live as they did in 1800? Why or why not?

20. What values and ways of life have we retained from the kind of life in the 1800s? What have we left behind and replaced with new ideas? Where are we going with our "life styles" in terms of the future? (an important aspect of the curriculum -- "futuring" with kids).

21. To follow the Environment Discussion of the nature trail activities, how is the Pioneer Village like the animal habitats? In what way is it different? Are there any limits on the environment of the Pioneer Village? If so, what created these limits?

22. Zooming in on the differences between the Pioneer Village and the nature trail habitats, what forces were acting on the natural environment in the Pioneer Village? What were the houses, garden, domestic animals, fences, fewer trees, paths, snakehouse, stone, indications of? Eventual conclusion: man changes his environment. How do we of the 1970s change our environment? Can you think of consequences, good or bad, of any of these changes?

23. A group of children might enjoy writing a play to be performed in the setting of the Pioneer Village (using the environment and culture of that time), to create and actually take the roles of persons from the 1880s. This activity might develop the children's understanding of how culture affects day to day life, and clarify the differences and similarities of people of the 1880s and people of the 1970s. The play might be followed with a discussion, keying on the question: How would your day have been different had you awakened in a 1880 pioneer village?

24. Ask the children if there was anything on the Pioneer Farm they did not understand--either what it was or why it was there. Discussion and explanation of children's questions could be followed by asking: What are some of the reasons they did not understand some of the things in the 1880 village? What things in our 1970 culture would someone from the 1880s have trouble understanding? What things would you predict we of the 1970s would find puzzling were we to visit a community of the 2080s?

25. Compare the life styles of the pioneer farmer and the owners of the Murat House. What is your attitude about both of these settings? Did you like one better than the other? Why?

26. After looking at the Pioneer Farm, can you reconstruct the whole farm from memory in the probable logical order of its construction? Can you now tell why you think the order of construction you have chosen is the most logical?

27. Crops were very important to the family that owned the Pioneer Farm. What were some of the crops grown? How were they used? Are there any similarities to our present day living? What is it that you liked about the Pioneer Farm? Why? Is there anything that you did not like? Why?

28 There were many products used by the owners of the Pioneer Farm. How many of these can you list? Place a check (✓) by those that were bought and an (-0-) by those that were made on the farm. Place a (-00-) by those that required help from other members of the family to be made.

29. Design a tool or piece of machinery not already in the farm-house or on the farm that could be used there--design it so that you could have made it if you had lived in those times. How would your invention affect life on the farm? Would you want to share your invention with others? Why or why not? How does it feel to have invented something useful? Why do you think people invent things?

30. Think of a machine or tool that you use in everyday life or that you particularly like. What did the people living in the farmhouse days use instead of this? What inventions along the way do you think were necessary to get that particular tool from that stage to what you use now? Do you think any changes will be made in this tool or machine in the future? If so, what? If not, why not?

31. Divide into small groups. Half the people in each group will be people in the time setting of the farm. They are going about their usual work on the farm when some strangely dressed people appear (the rest of the group) -- they have been transported by a time machine from the year 1975 to the days of the farmhouse. Role play the encounters between the two sections of the group. What things about the other section do you find strange or hard to understand? What things do you like about them or their environment? Would you (each section) try to persuade those of the other section to enter/remain in your time period? Why or why not? What things from your time period (either the farmhouse times or contemporary times) would you describe to give the people in the other section a feeling for your life and times?

32. Imagine you are Charles or Catherine Murat. Write a diary about an event or period of your life as a Murat which you feel to be the most important and/or meaningful.

33. The class can be asked to role-play a man, woman or child living on the farm about 100 years ago. They can then write an imaginary diary describing in detail one day in the life of the people they are role-playing.

34. Ask the class to think about the children who lived on the farm. How did they spend their leisure time? Did they have to make their own toys? The class can invent games that the children of that era played or describe how they made toys from materials found on the farm.

35. After doing the activity above, the class can compare and contrast the farm children's life to their own.

36. Generate discussion on the following topic: If a typical family living on the farm a hundred years ago were suddenly transposed in time to a modern day city, how would they feel? What problems would the father, mother and children each encounter? Would they be happy? Why or why not?